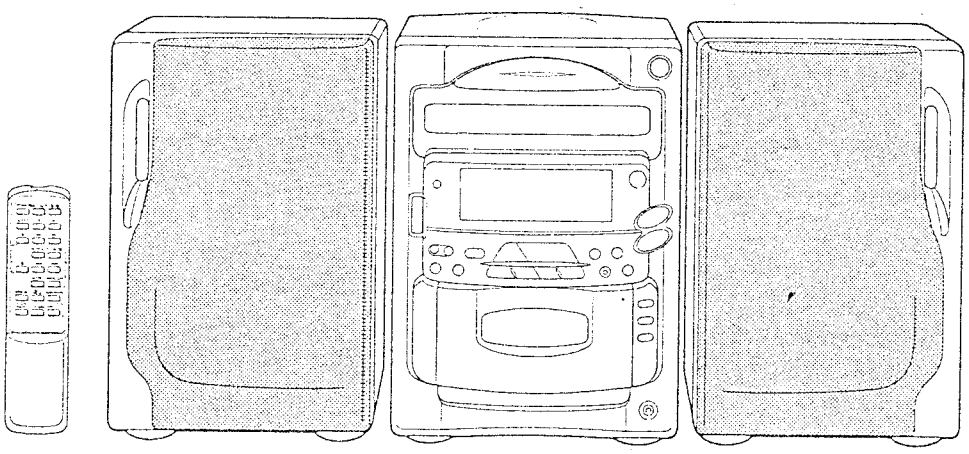
SANYO

FILE NO.

Service Manual

Micro CD Hi-Fi System

DC-MS3 (XE)
(UK)



Specifications

PRODUCT CODE No.
129 477 00 (UK)
129 477 01 (XE)

Note: The below mentioned specifications are mainly based on the IHF measurements standard. They can therefore not directly be compared with specifications based on the DIN standard or other standards.

TUNER SECTION

Reception frequency	FM : 87.5 - 108.0 MHz
	MW : 522 - 1,611 kHz
	LW : 144 - 288 kHz

CASSETTE DECK SECTION

Track system	4 track, 2-channel stereo
Frequency response	50 Hz - 13,500 Hz
Signal to noise ratio	50 dB
Wow & Flutter	0.12 % (WRMS)
Tape speed	4.75 cm/sec
Fast forward and rewind time	Approx. 110 sec. (C-60)

CD PLAYER SECTION

Channels	2-channel stereo
Sampling frequency	44.1 kHz
Pick-up	Optical 3-beam semiconductor laser
Laser output	0.6 mW (Continuous wave max.)
Wave length	790 nm
Frequency response	20 Hz - 20,000 Hz
Wow & Flutter	Below measurable limits

AMPLIFIER SECTION

Output power	12.5 W x 2 (at 4 ohms, 10% distortion)
Sound preset	Four electronic presets
Outputs	SPEAKER : 4 ohms
	PHONES : 8 - 32 ohms
Power requirements	AC : 230 V, 50 Hz
Power consumption	70 W
Dimensions (WxHxD)	Approx. 180 x 260 x 288 mm
Weight	Approx. 4.3 kg

SPEAKER SYSTEMS

Type	Bass reflex
Unit used	Woofer: 10 cm cone type
Maximum power-handling capacity	25 W (peak)
Nominal impedance	4 ohms
Dimensions (WxHxD)	Approx. 165 x 260 x 215 mm
Weight	Approx. 1.6 kg (per speaker)

Specifications subject to change without notice.

This service manual consists of "DC-MS3U"(main unit), "RB-MS3" (remote control), "SX-MS3" (speaker system) .

REFERENCE No. SM580566

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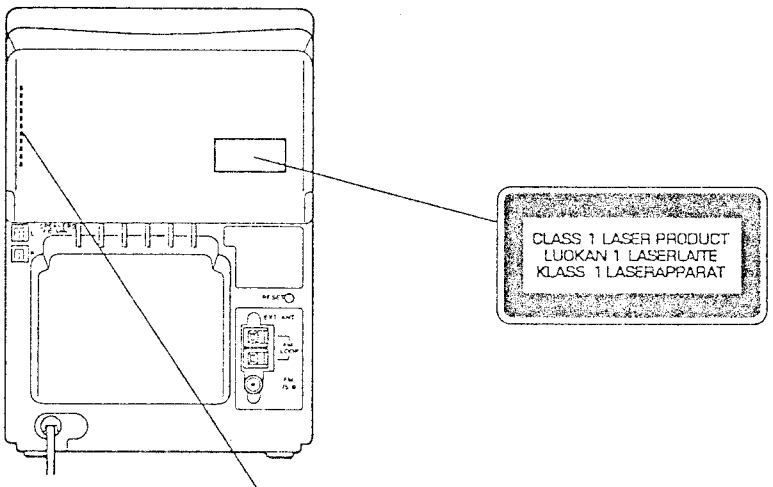
LASER BEAM SAFETY PRECAUTIONS

- Pick-up that emits a laser beam is used in this CD player.

CAUTION :
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE

LASER OUTPUT ..... 0.6 mW Max. (CW)
WAVELENGTH ..... 790 nm

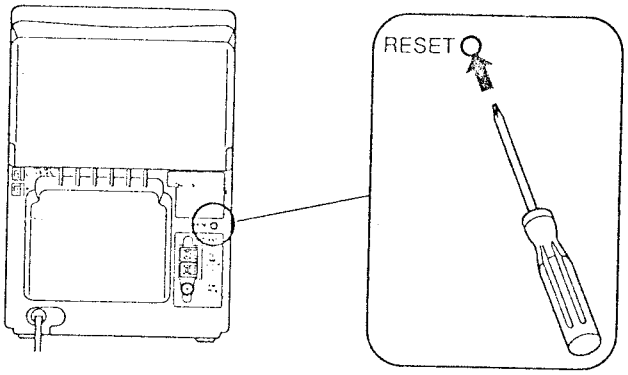


CAUTION – INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.
ADVARSEL – USYNLIG LASER STRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION, UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARNING – OSYNLIG LASER STRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRR ÄR URKOPPLAD. STRÅLEN ÄR FARLIG.
VORSICHT – UNSICHTBARE LASERSTRAHLUNG TRITT AUS, WENN DECKEL GEÖFFNET UND WENN SICHERHEITSVERRIEGELUNG ÜBERBRÜCKT IST. NICHT, DEM STRAHL AUSSETZEN.
VARO! Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.

WHAT TO DO IF

If the operation of the unit or display is not normal, or you wish to clear the contents of the memory.

1. Disconnect the power cord's plug from the electrical outlet.
2. Press the RESET button for at least 30 seconds.
3. Connect the power cord.
4. Press the POWER button to turn the power on.

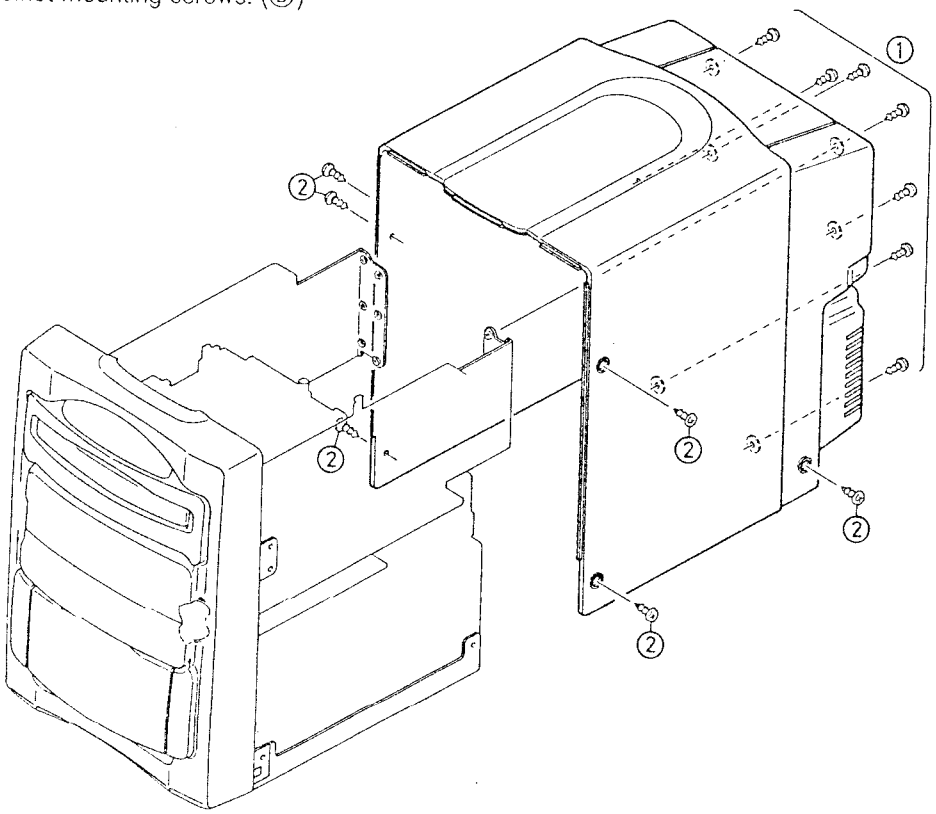


REMOVAL AND INSTALLATION

- Disconnect the power cord's plug from the electrical outlet.
- All wiring should be returned to the original position after work is completed.
- First have ready many the new FIXERS (614 129 2496) for replacement.
- Arrange the lead wires so that they are not near the heat sink.

a. CABINET

(1) Remove the 7 rear cabinet mounting screws. (①)
(2) Remove the 6 cabinet mounting screws. (②)

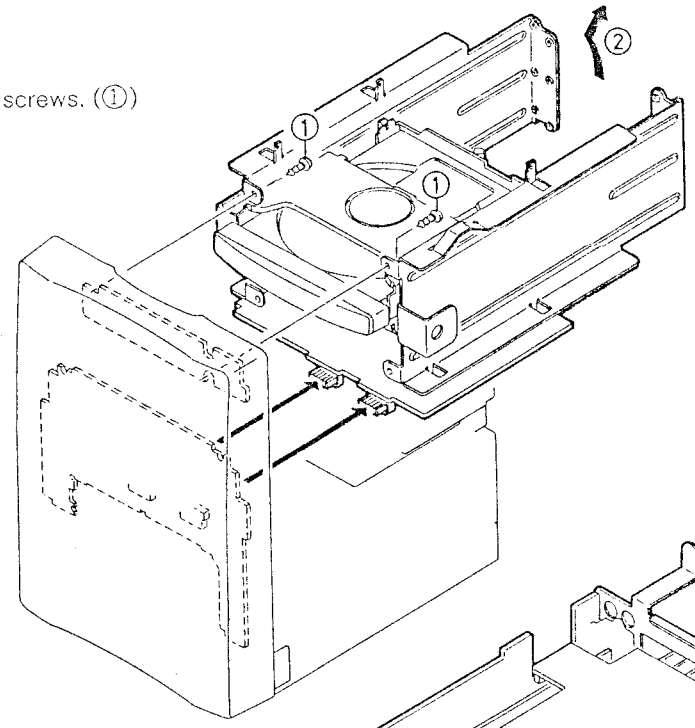


REMOVAL AND INSTALLATION

b. CD BLOCK

(1) Remove the 2 CD mechanism mounting screws. (①)

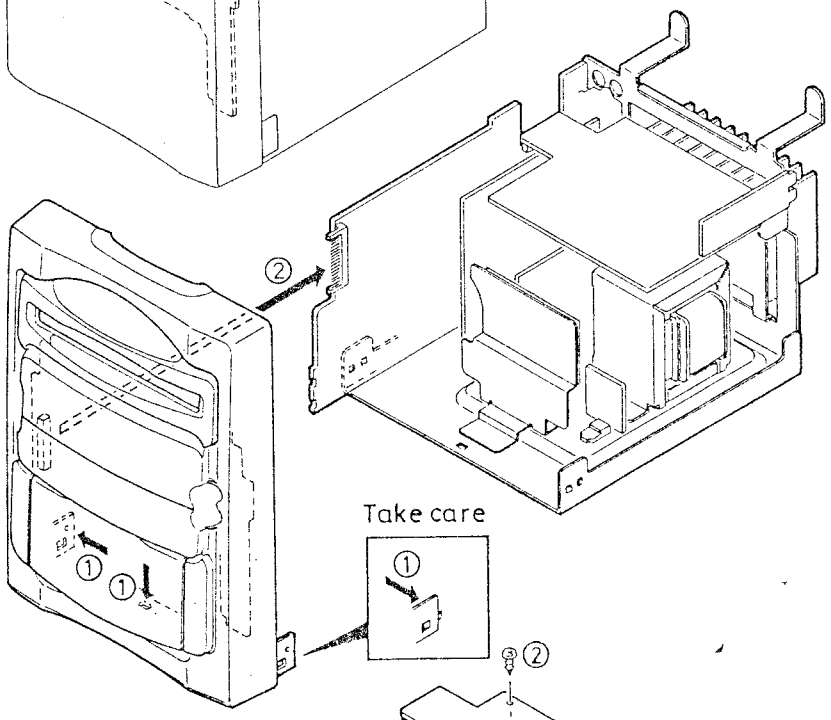
(2) Remove the CD mechanism. (②)



c. FRONT PANEL & PRE-AMP. P.W.BOARD

(1) Remove the front panel. (①)

(2) Remove the connector. (②)

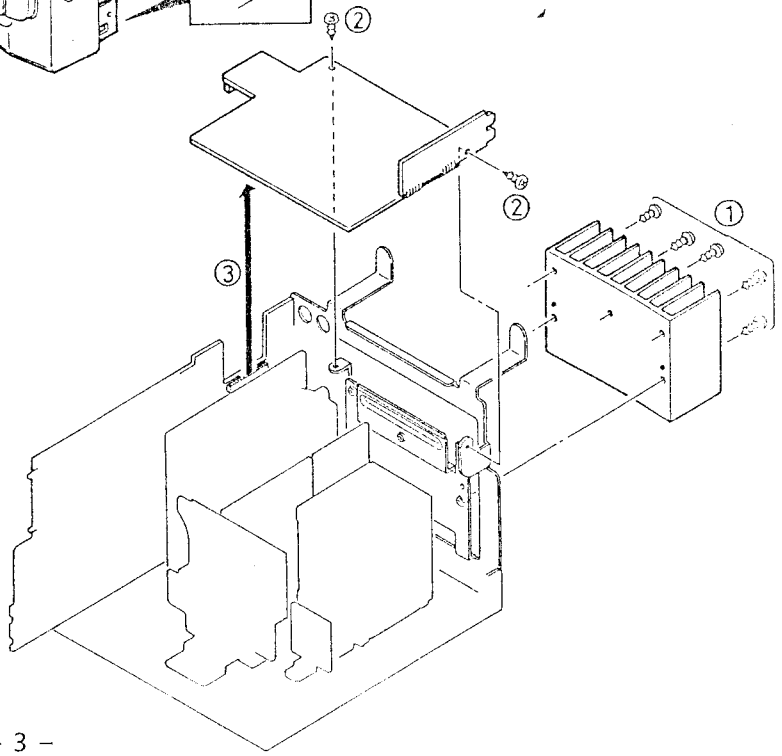


d. POWER AMP. & SPEAKER TERMINAL P.W.BOARD

(1) Remove the 5 heatsink mounting screws. (①)

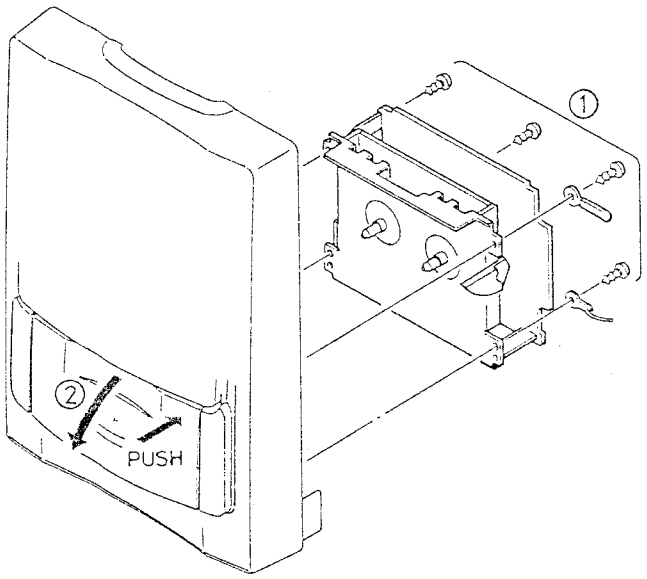
(2) Remove the POWER AMP. P.W.Board mounting screws. (②)

(3) Remove the connector. (③)

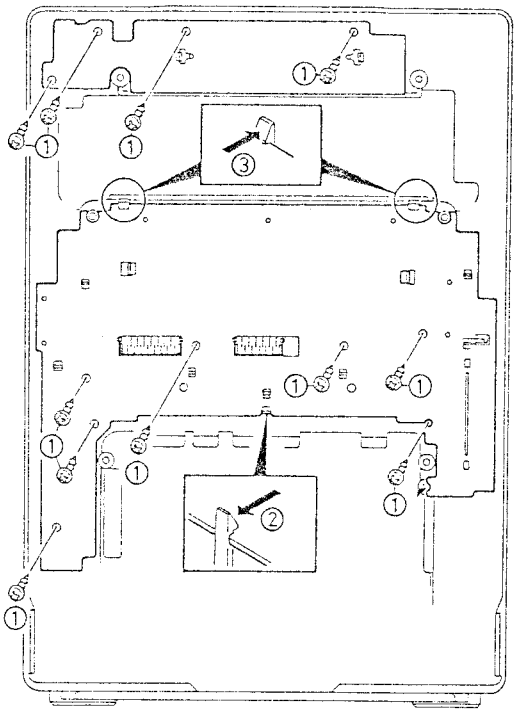


e. TAPE MECHANISM

(1) Remove the 4 tape mechanism mounting screws. (①)
(2) Open the cassette compartment lid. (②) .
(3) Remove the mechanism.

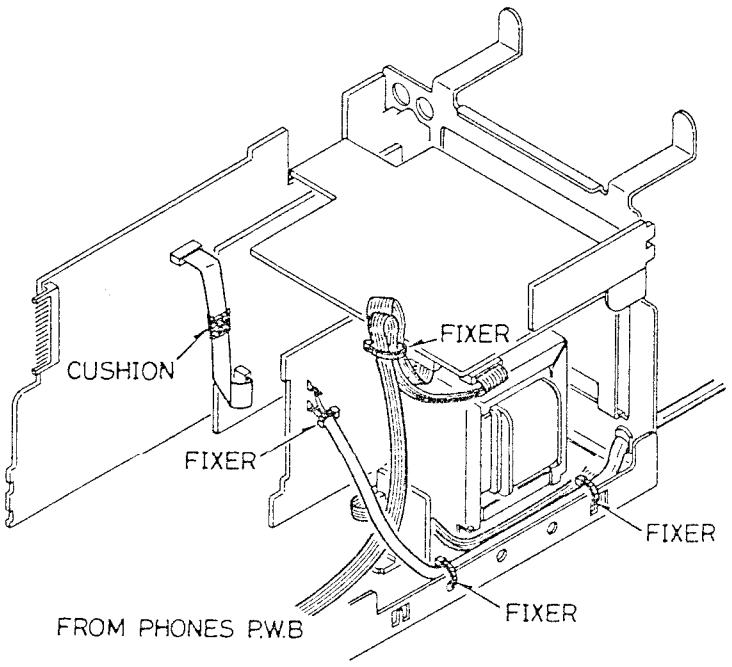


f. FRONT P.W.BOARD



g. WIRING LAYOUT

- Arrange the lead wires so that they are not near the heat sink of the POWER AMP. P.CW.Board.



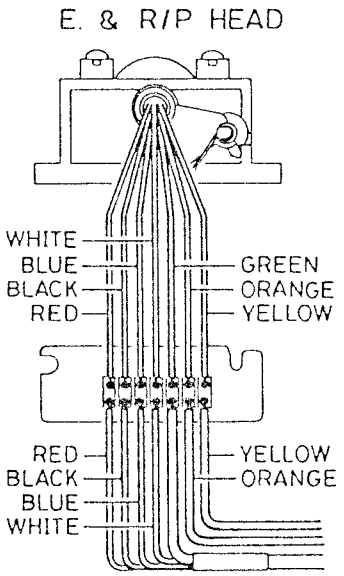
TAPE DECK ADJUSTMENTS

Adjustment Item	Test Tape	Measuring Instrument	Output connection	Adjust location	Adjust value	Note
(a) HEAD AZIMUTH	VTT738 etc. (10 kHz)	AC-voltmeter	SPEAKER TERMINAL	HEAD AZIMUTH SCREW (FWD / REVERSE)	Max.	---
(b) MOTOR SPEED (NORMAL)	MTT-111 (3,000 Hz)	FREQUENCY COUNTER	SPEAKER TERMINAL	VR302	3,000 Hz	CN303 (1 & 2) "OPEN"
(c) MOTOR SPEED (HIGH)	TCW-211 (1,500 Hz)	FREQUENCY COUNTER	SPEAKER TERMINAL	VR301	3,000 Hz	CN303 (1 & 2) "SHORT"

a. HEAD REPLACEMENT AND AZIMUTH ADJUSTMENT

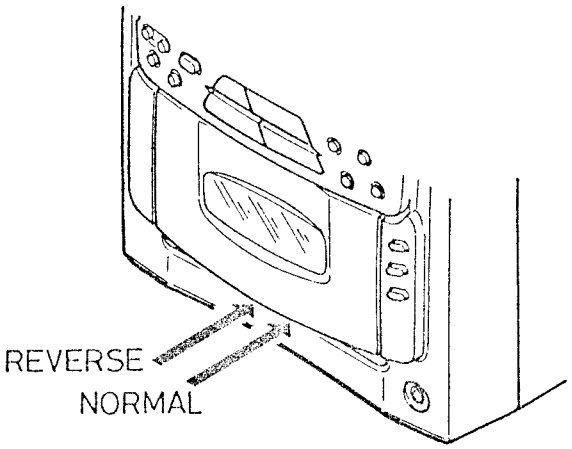
(a) Head replacement

(1) After replacement, demagnetize the heads by using a degausser.
(2) Be sure to clean the heads before attempting to make any adjustments.
(3) Be sure both channels (1 and 2) are the same level (Using a dual-channel oscilloscope).
(4) All wiring should be returned to the original position after work is completed.



(b) Head azimuth

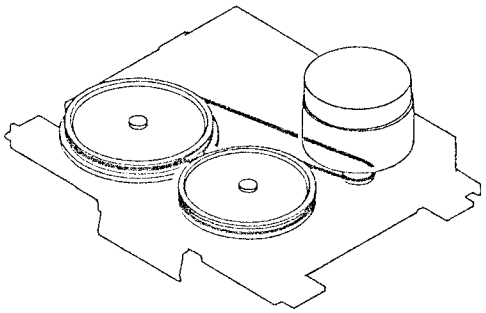
(1) Load a test tape (VTT-738, etc.: 10 kHz) for azimuth adjustment.
(2) Press the Forward PLAY button (normal playback).
(3) Use a flat-tip (-) screwdriver to turn the screw for normal azimuth adjustment so that the left and right outputs are maximized at the same phase during normal playback.
(4) Press the Reverse mode button.
(5) Play the tape in the reverse mode.
(6) Use a flat-to- (-) screwdriver to turn the screw for reverse azimuth adjustment so that the left and right outputs are maximized at the same phase during reverse playback.
(7) Press the STOP button.

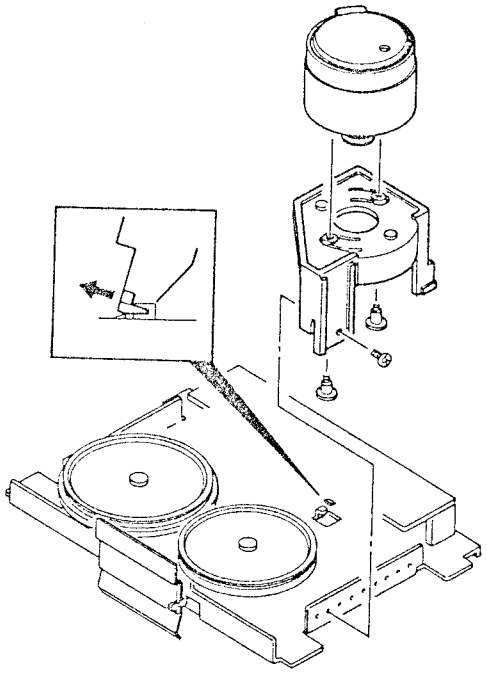


- After making the adjustment, secure the azimuth adjustment screw by applying screw lock (TB-1401B).

b. MOTOR REPLACEMENT AND SPEED ADJUSTMENT

(a) Motor replacement





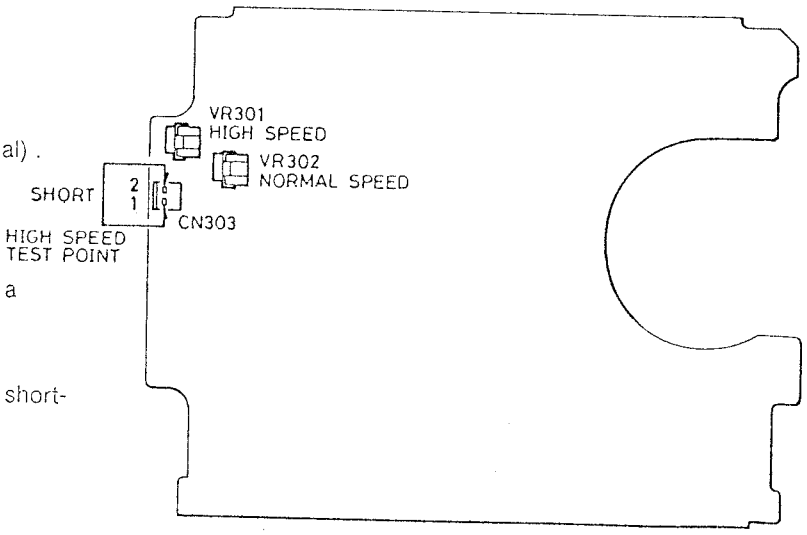
(b) Motor speed

- NORMAL SPEED

(1) Insert the test tape (MTT-111, etc. 3,000 Hz) .
(2) Press PLAY button.
(3) Adjust VR302 so that the frequency counter shows a reading of 3,000Hz.
(4) Press STOP button.

- HIGH SPEED

(1) Insert the test tape (TCW-211, etc. 1,500 Hz optional) .
(2) Press PLAY button.
(3) Set to the high-speed condition.
(4) Short-circuit test points socket CN303 (1 & 2).
(5) Adjust VR301 so that the frequency counter shows a reading of 3,000Hz.
(6) Press STOP button.
(7) After the completion of the adjustment, remove the short-circuit between socket CN303 (1 & 2).



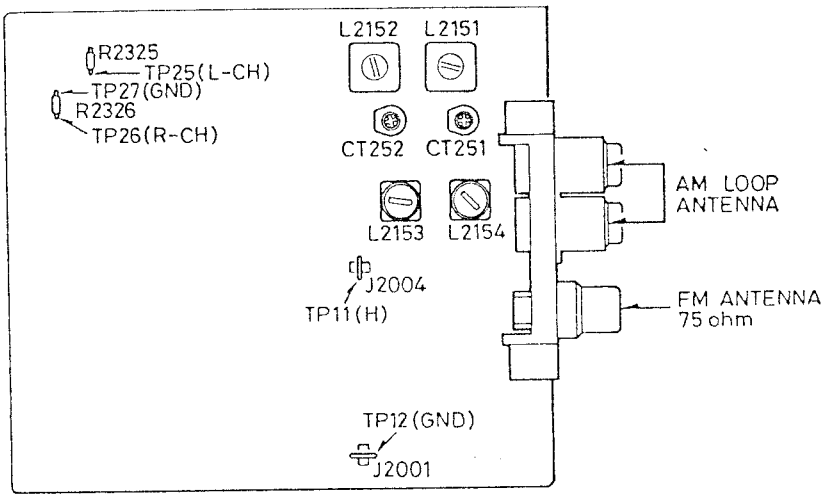
c. CHECKING THE MECHANISM TORQUES

- Clean the head, capstan and pinch roller before making any measurement.
- Check during both normal and reverse playback.

Measurement	Take-up torque	Back tension	Tape tension
Cassette for measurement	PLAY:TW-2111A (FWD) PLAY:TW-2121A (REV) F.FWD/REW:TW-2231	PLAY:TW-2111A (FWD) PLAY:TW-2121A (REV)	Drive-power cassette TW-2412 (FWD) TW-2422 (REV)
PLAY	30~ 60 gr.cm	2.0~ 5.0 gr.cm	80 gr or more
F.FWD / REW	70~ 140 gr.cm	–	–

TUNER ADJUSTMENTS

- Use a plastic screw driver for adjustments. • Speaker impedance : 4 ohm • Standard Output : 500 mW
- FM MODE switch : STEREO
- TUNING FM : 87.5 - 108.0 MHz (50 kHz step) MW : 522 - 1,611 kHz (9 kHz step) LW : 144 - 288 kHz (9 kHz step)



SG RF Level : 75 ohm Open Voltage dBμV
Antenna : 75 ohm unbalanced , Modulation : 1 kHz,
Dev. : ± 22.5 kHz (MONO) ± 22.5 kHz (STEREO) ± 6.75 kHz (PILOT)

a. ADJUSTMENTS OF FM BAND

Step	Adjusting Circuit	Connections		SG Frequency	Position of tuning dial	Adjustment	VTVM Oscilloscope or DC voltmeter
		Input	Output				
1	Tuning coverage	---	Connect to Digital DC voltmeter TP 11 (H), TP 12 (G)	87.5 MHz	Low end	---	0.9~1.3V
				108.0 MHz	High end	---	less than 8.0V
2	Tracking	FM Antenna (SG = 8dBμV)	Connect to VTVM TP 25 (H) or TP 26 (H), TP 27 (G)	90.0 MHz	90.0 MHz	---	Max.
				106.0 MHz	106.0 MHz	---	

b. ADJUSTMENTS OF MW BAND

SG Modulation : 1,000 Hz, 30% IRE Loop Antenna

Step	Adjusting Circuit	Connections		SG Frequency	Position of tuning dial	Adjustment	VTVM Oscilloscope or DC voltmeter
		Input	Output				
1	Tuning coverage	---	Connect to Digital DC voltmeter TP11 (H), TP12 (G)	522 kHz	Low end	L2153	1.0 ± 0.05V
				1611 kHz	High end	---	less than 9.0V
2	Tracking	Connect AM SG to Test Loop (SG = 80dBμV)	Connect VTVM TP25 (H) or TP26 (H), TP27 (G)	603 kHz	603 kHz	L2152	Max.
				1404 kHz	1404 kHz	CT252	

c. ADJUSTMENTS OF LW BAND

Step	Adjusting Circuit	Connections		SG Frequency	Position of tuning dial	Adjustment	VTVM Oscilloscope or DC voltmeter
		Input	Output				
1	Tuning coverage	---	Connect to Digital DC voltmeter TP11 (H), TP12 (G)	144 kHz	Low end	L2154	1.5 ± 0.05V
				288 kHz	High end	---	less than 9.0V
2	Tracking	Connect AM SG to Test Loop (SG = 65dBμV)	Connect to VTVM TP25 (H) or TP26 (H), TP27 (G)	162 kHz	162 kHz	L2151	Max.
				279 kHz	279 kHz	CT251	

CD PLAYER MECHANISM ADJUSTMENTS

a. INSTALLING THE DISC TRAY

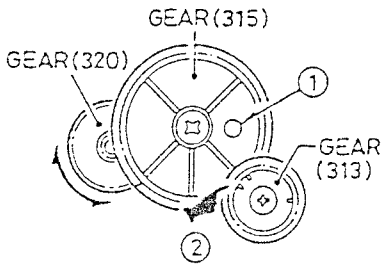
(1) Join together the gear (315) and chassis holes. (①)

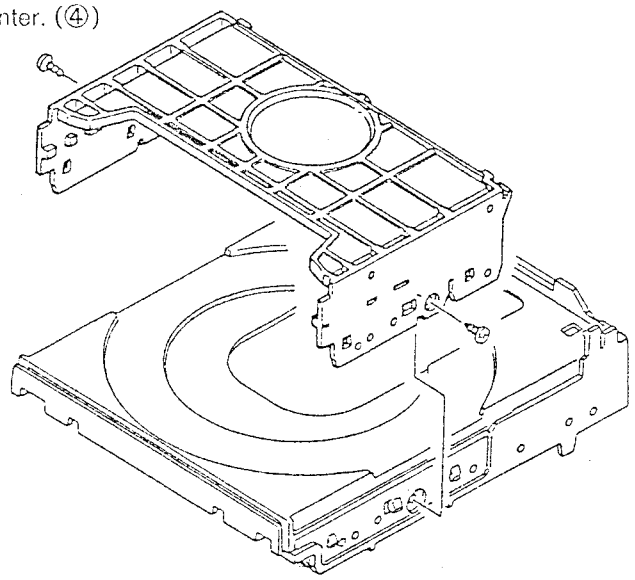
(2) Attach the gear (313) rib as indicated in the diagram. (②)

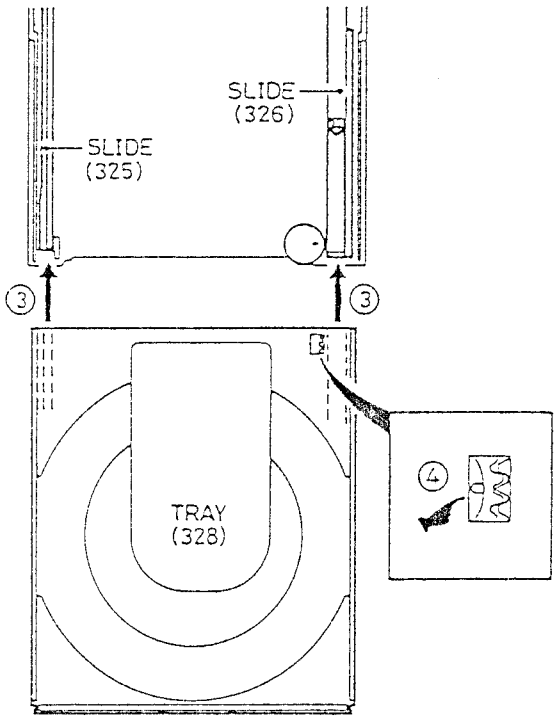
(3) Fit the disc tray into the grooves of slide (325) and slide (326). (③)

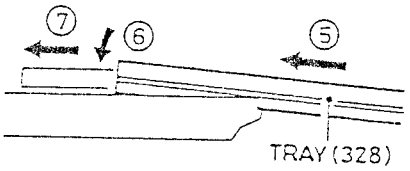
(4) Fit together the gear rib of the disc tray and the teeth in the center. (④)

(5) Attach the disc tray as indicated in the diagram. (⑤ - ⑦)



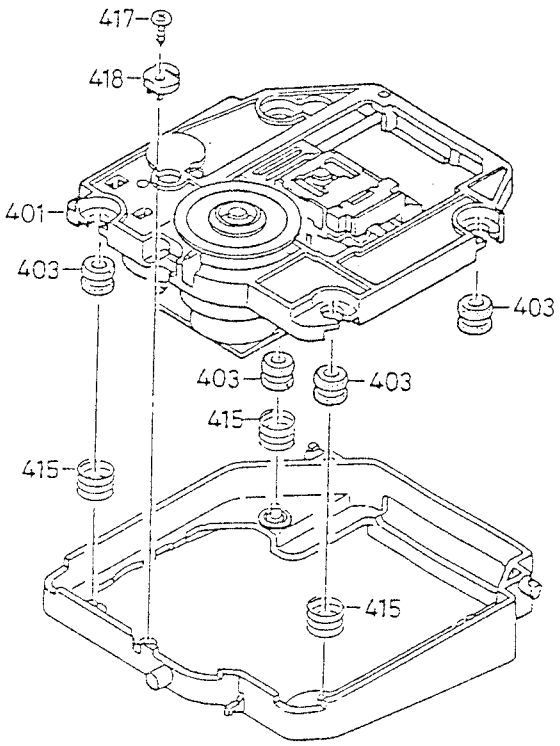






b. DISASSEMBLY OF THE CD PLAYER MECHANISM

(a) CD Mechanism



CD PLAYER MECHANISM ADJUSTMENTS

(b) Replacement of the spindle motor

- First, prepare the new turntable (401-1) and new special washer (401-4) for replacement.
  The removed turntable will be deformed by the heat of the soldering iron, and cannot be reused.
- Prepare dial-type calipers.

(1) The attached bonding material can be dissolved by using a 60W soldering iron to heat the shaft at the upper part of the turntable for about one minute.

(2) The turntable can then be removed from the shaft by very carefully applying force upward at the center of the lower surface of the turntable.

(3) Remove the two screws (401-2) and remove the spindle motor (401-5).

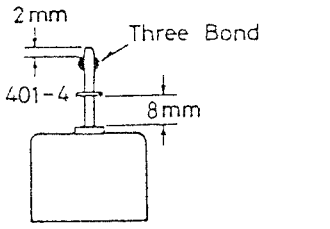
(4) Attach the special washer (401-4) to the spindle motor.

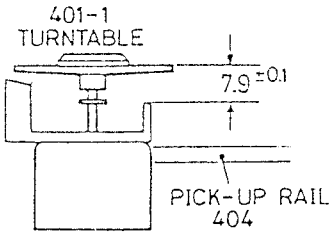
(5) Clean the spindle motor's shaft.
To clean them, use a soft cloth soaked in isopropyl alcohol.

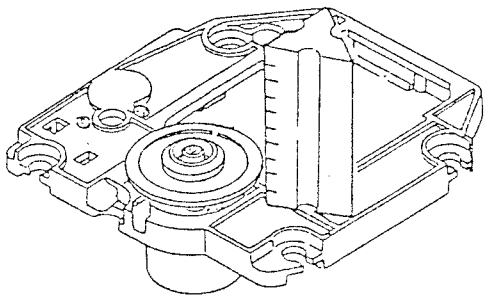
(6) Apply a small amount of a mixture of the **"Three Bond 2001"** and **"2015F"** bonding materials to the motor's shaft.

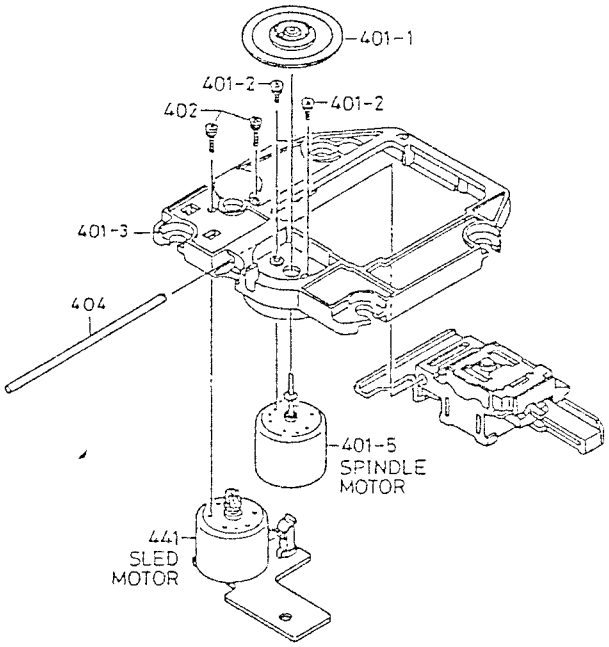
(7) Install the turntable as shown in the figure.

(8) Secure the turntable by pressing gently.
Be sure to wipe away (by using a piece of cloth, or similar material) any bonding material coming out of the hole.









(c) Replacing the pick-up

(1) Insert the pick-up rail (404) into the base chassis. (401-3)

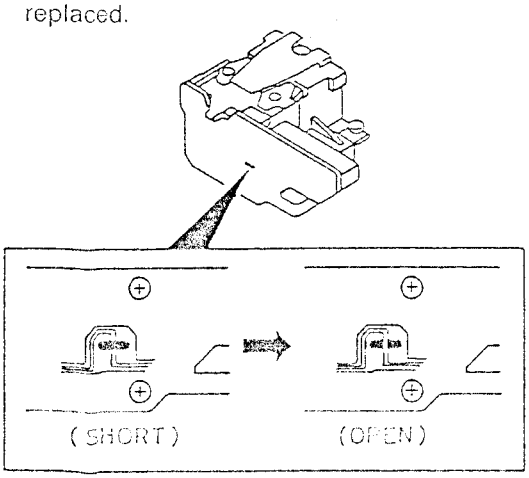
(2) If the lach of the base chassis (401-3) are missing when the pick-up rails have been installed, first wipe the tips of the rail with alcohol.

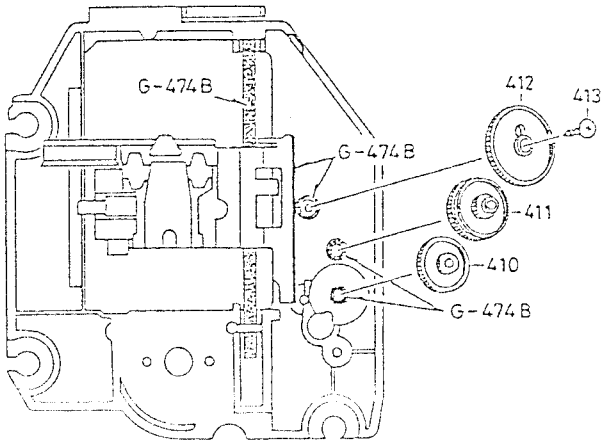
(3) After the pick-up has been replaced, apply grease (FLOIL G-474B) to the ▨ sections.

(4) The pick-up P.W.Board pattern is **"shorted"**, as shown in the figure, so that the new pick-up will not be susceptible to the effects of static.

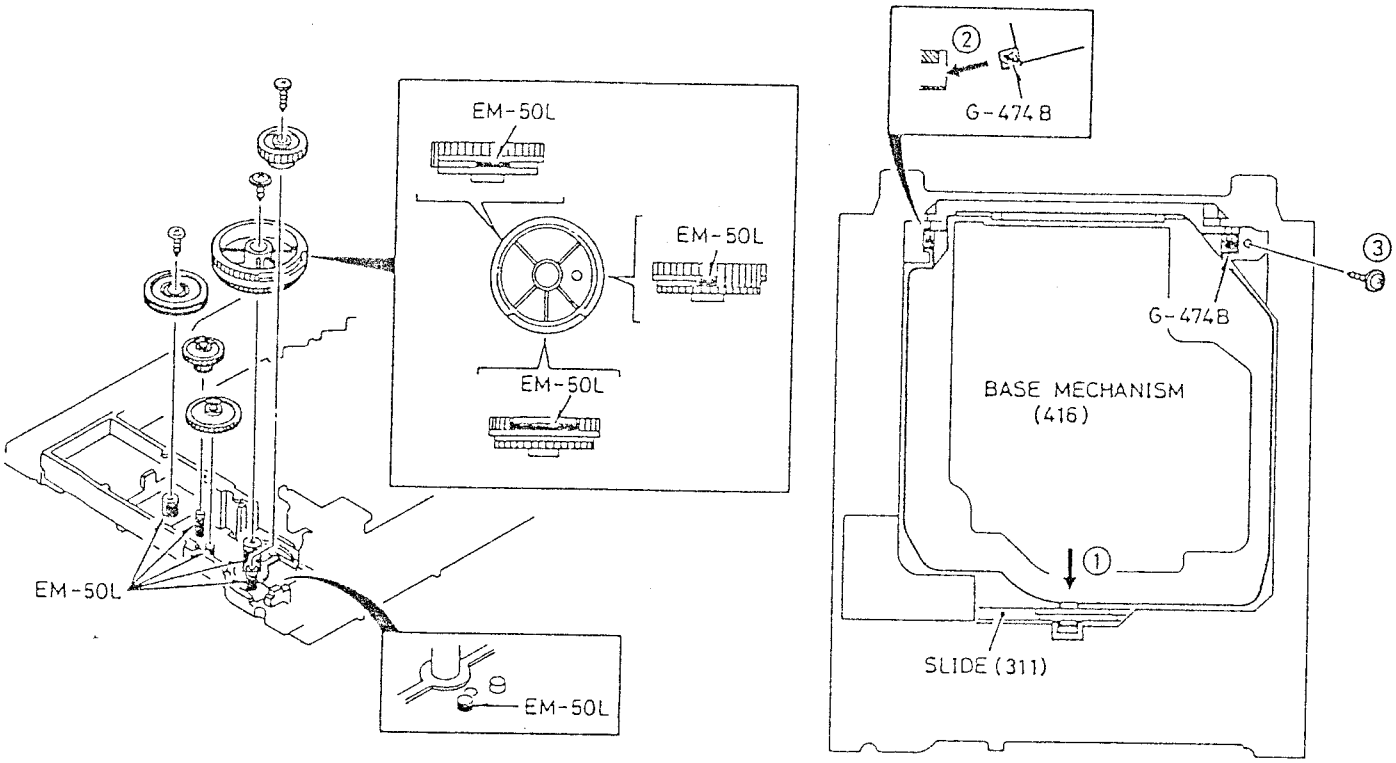
(5) Set the pattern to **"open"** after the pick-up has been replaced.

(BE SURE AT THIS TIME,
NOT TO TOUCH ANY OTHER PART.)





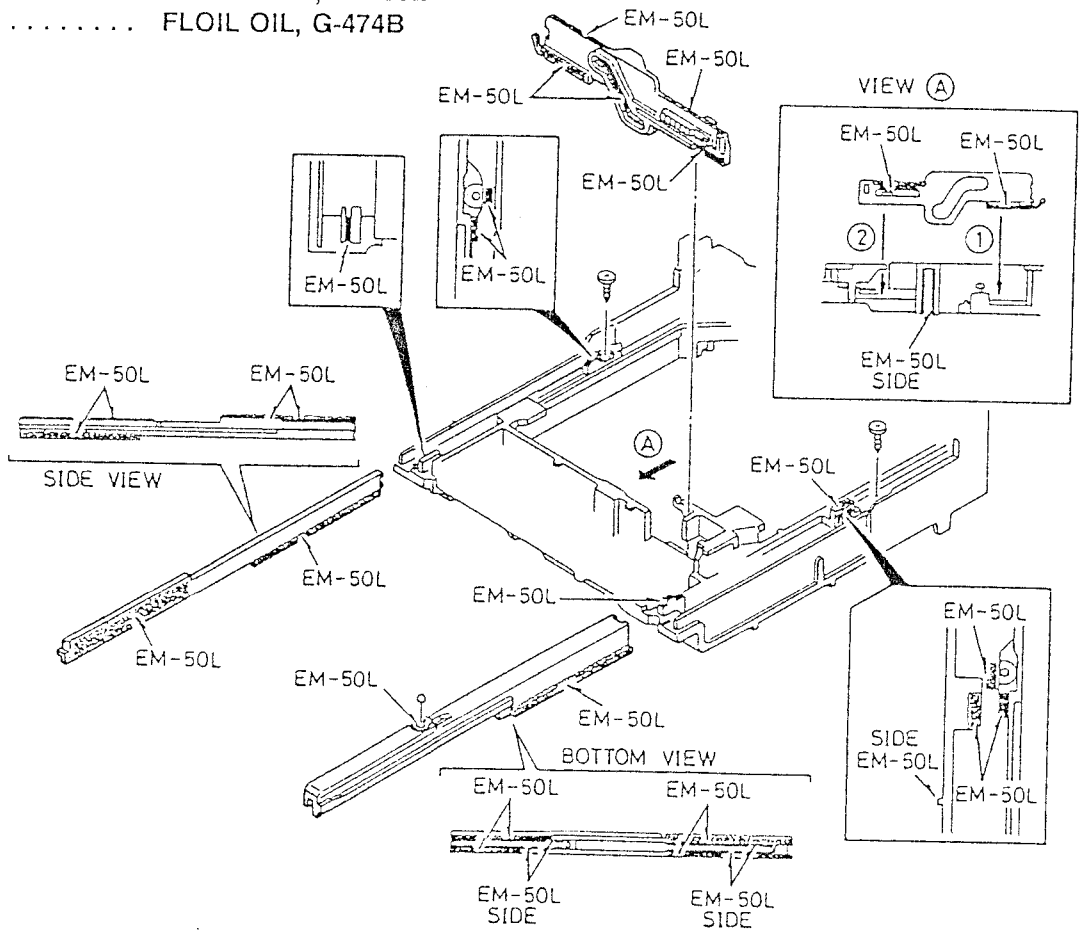
(d) Replacement and lubrication of the CD mechanism



Note :

EM-50 ..... MOLYKOTE, EM-50L

G-474B ..... FLOIL OIL, G-474B



CD PLAYER ADJUSTMENTS

a. PREPARATIONS

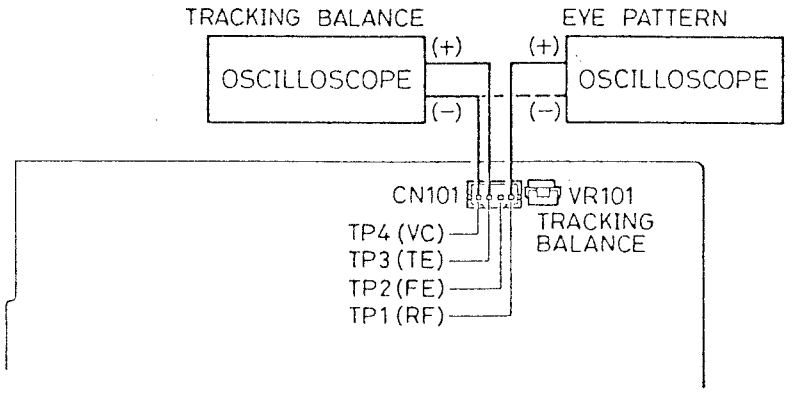
(a) Measuring instruments, tools and filter

(1) Test disc. : YEDS 18 (SONY) or etc.

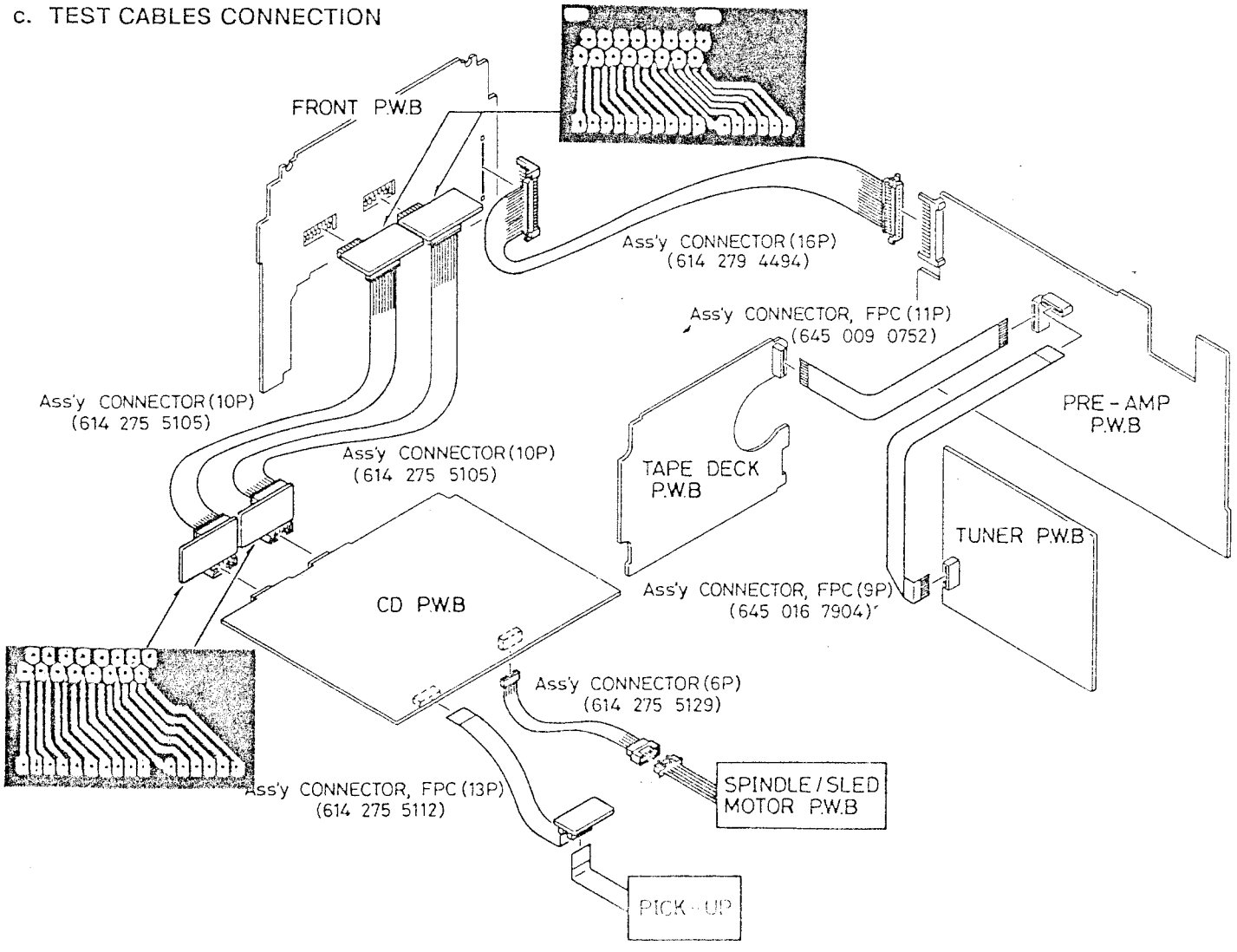
(2) Oscilloscope : SS5711 (10 MHz or dual-phenomenon)
or Memoryscope : DSS6521 (Storagescope)

(3) Screwdrivers (non-metallic) for adjustments

b. PARTS LOCATION



c. TEST CABLES CONNECTION

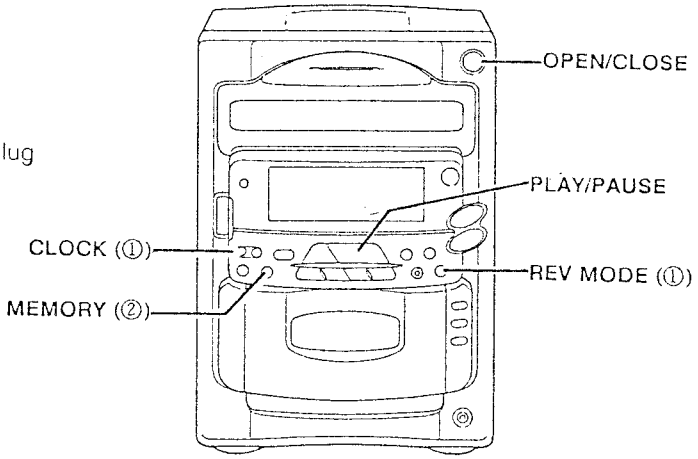


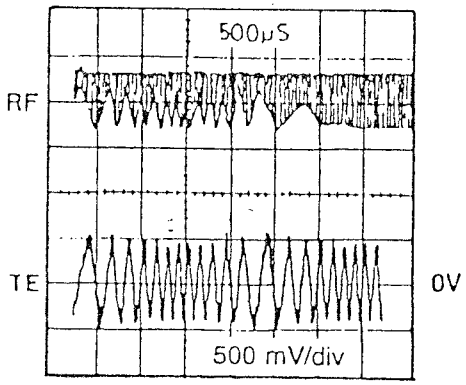
d. ADJUSTMENTS

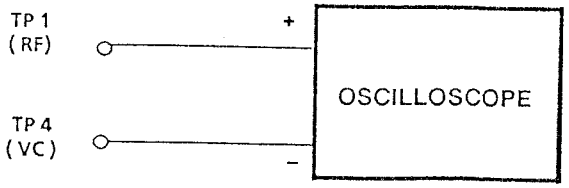
Adjustment Item	Measuring instrument	Input connection	Output connection	Adjustment location	Adjustment value
(a) Tracking balance	Oscilloscope	—	TP 3 : TE TP 4 : VC	VR101	Waveform symmetry A = B
(b) Checking the "eye" pattern	Oscilloscope	—	TP 1 : RF TP 4 : VC	—	Check be sure that the "eye" pattern is at the center of the waveform and that the diamond shape is clearly defined

(a) Tracking balance adjustment

(1) Within one second after pressing **CLOCK** & **REV MODE** switches at the same time, press the **MEMORY** switch. (①,②)
(Service mode : TRACKING BALANCE)
(2) Connect an oscilloscope to TP3 (TE) and TP4 (VC).
(3) Set the test disc. (DISC 1)
(4) PLAY / PAUSE switch push "ON".
(5) Adjust **VR101** so that the oscilloscope's waveform is symmetrical, as shown in the illustration.
(6) To cancel service mode, disconnect the power cord's plug from the electrical outlet.

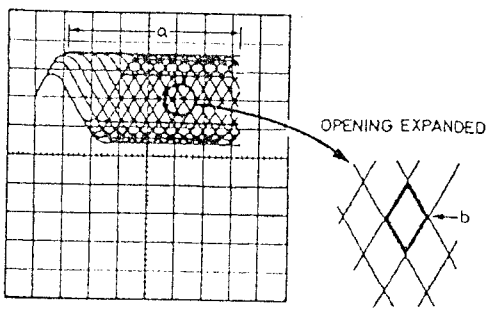




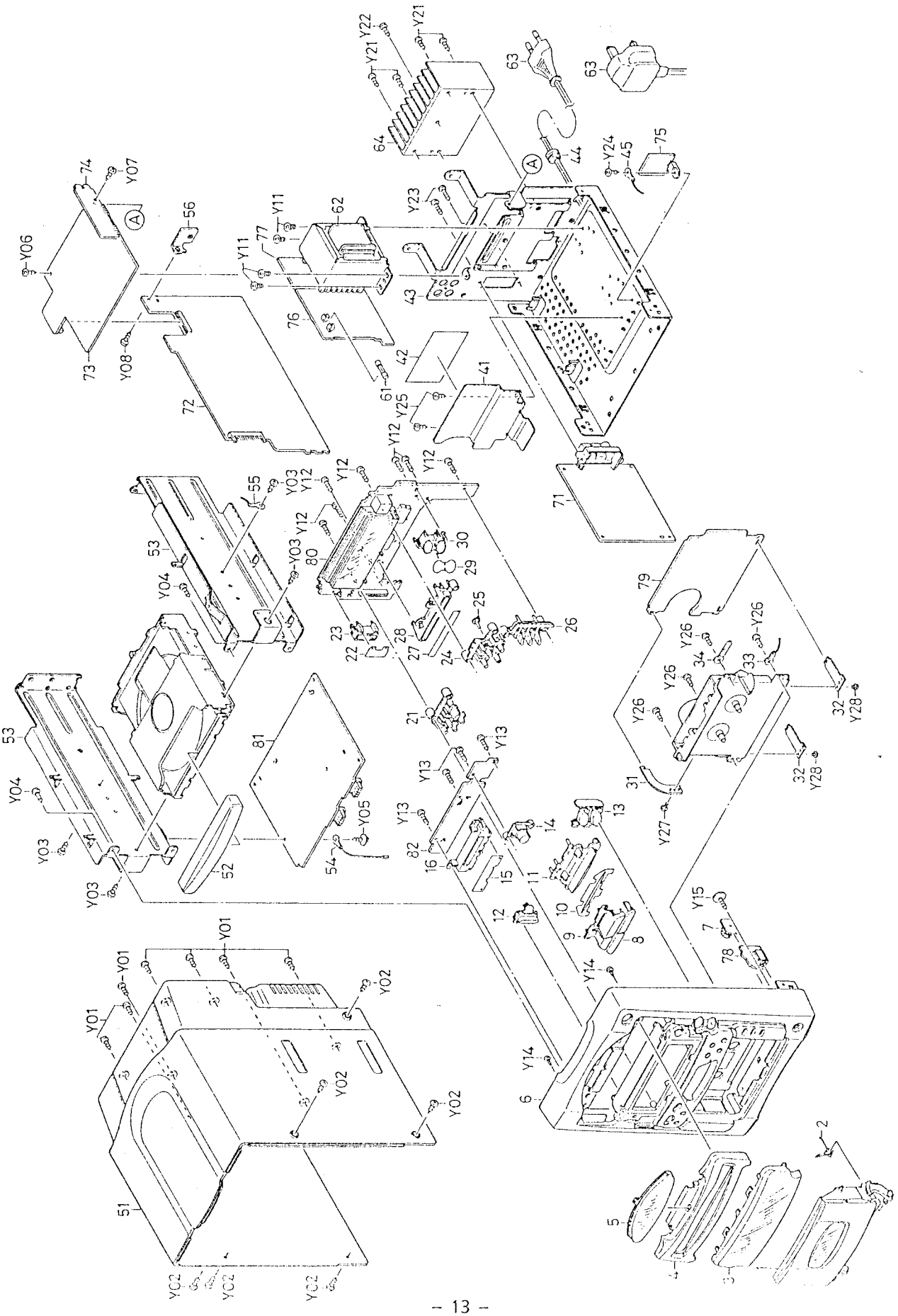


(b) Checking the "eye" pattern

(1) Switch "ON" the POWER.
(2) Connect an oscilloscope to TP1 (RF) and TP4 (VC).
(3) Load the test disc.
(4) PLAY switch push ON.
(5) Check to be sure that the " **eye** " pattern is at the center of waveform and that the diamond shape is clearly defined.
(6) Press the STOP button.
(7) Switch "OFF" the **POWER**.



EXPLODED VIEW (CABINET & CHASSIS)



PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

CAUTION: Regular type resistors and capacitors are not listed. To know those values, refer to the schematic diagram.
Regular type resistors are less than 1/4W carbon type and 0 ohm chip resistors.
Regular type capacitors are less than 50V and less than 1000μF type of Ceramic type and Electrical type.

N.S.P : Not available as service parts.

PACKING & ACCESSORIES

Ref. No.	Part No.	Description
	614 275 2340	CARTON CASE (XE)
	614 271 4898	CARTON CASE (UK)
	614 271 4201	CUSHION,TOP
	614 271 4218	CUSHION,BOTTOM
	614 275 2548	INSTRUCTION MANUAL (XE)
	614 271 4928	INSTRUCTION MANUAL (UK)
	645 012 4631	POLY SHEET,500X1050MM (XE)
	614 222 1365	SHEET,SET,500X1050MM (UK)
	614 245 8587	NOTICE,AC POWER CORD
	645 011 3826	REMOCON,RB-MS3
	645 005 7007	COVER,BATTERY, REMOTE CONTROL
	614 229 4635	ANTENNA,FM
	645 005 1227	ASSY,ANTENNA,LOOP,AM

CABINET & CHASSIS

Ref. No.	Part No.	Description
1	614 279 4456	ASSY,LID,CASSETTE (WITH WINDOW)
2	614 271 4645	SPRING,WIRE,LID,CASSETTE
3	614 271 3570	DEC,WINDOW,FL,DISPLAY
4	614 271 3778	PANEL,FRONT,CD
5	614 271 3648	DEC,WINDOW,CD
6	614 271 4553	ASSY,PANEL,FRONT
7	614 270 8316	ASSY,GEAR,LID,CASSETTE
8	614 271 3402	BUTTON,CD TRACK/DECK
9	614 271 3396	BUTTON,MECHANISM, STOP/CD PLAY/PAUSE
10	614 274 8541	COVER,DECK,MECHANISM,BUTTON
11	614 271 3617	DEC,WINDOW,MECHANISM,BUTTON
12	614 271 3433	BUTTON,POWER
13	614 271 3426	BUTTON,VOLUME(+)(-)
14	614 271 3440	BUTTON,OPEN/CLOSE
15	614 274 8596	DEC,SHEET,DISC
16	614 274 8671	REFLECTOR,CD WINDOW
21	614 271 3419	BUTTON,FUNCTION/FUNCTION/ CLOCK/TIMER/BAND/MEMORY
22	614 274 8572	DEC,SHEET,POWER,BUTTON
23	614 271 3822	REFLECTOR,BUTTON,POWER
24	614 271 3464	BUTTON,COMPU.REC/TUNE(+)(-)
25	614 271 3624	DEC,WINDOW,REC,BUTTON
26	614 271 3471	BUTTON,SOUND PRESET/ BASSXPANDER/DOLBY NR
27	614 274 8619	DEC,SHEET,MECHANISM,BUTTON
28	614 276 3810	REFLECTOR,DEC,WINDOW
29	614 274 8602	DEC,SHEET,VOLUME
30	614 271 3815	REFLECTOR,BUTTON,VOLUME
31	614 272 9656	MOUNTING,TAPE DECK PWB,LEFT
32	614 271 3730	MOUNTING,PWB,BOTTOM
33	614 051 9785	LUG,TAPE MECHANISM
34	614 272 1582	LUG,TAPE MECHANISM LEAD
41	614 271 3839	SHIELD,POWER TRANSFORMER
42	614 275 0247	SPACER,SHIELD,TRANSFORMER
43	614 271 3501	CABINET,BOTTOM
44	614 129 1901	FIXER,AC POWER CODE
45	614 051 9785	LUG,REGULATOR PWB
51	614 275 2166	ASSY,CABINET,TOP (XE)
51	614 271 4539	ASSY,CABINET,TOP (UK)
52	614 271 3785	PANEL,CD,TRAY
53	614 271 3662	HOLDER,BRACKET,CD MECHANISM
54	614 051 9785	LUG,CD PWB
55	614 051 9785	LUG,CD MECHANISM
56	614 275 5242	MOUNTING,PWB,PRE-AMP.
	614 275 5266	REFLECTOR,SHEET,IR
	614 125 0236	CUSHION,DEC,WIND,CASSETTE
	614 208 0986	CUSHION,10X40MM,TUNER PWB
	614 129 4971	FIXER,NYLON,LEAD MTG.
	614 216 9322	SHEET,PVC,20X40MM,SHIELD, POWER TRANSFORMER
	614 231 6832	LABEL,SAFETY,LASER CLASS 1

FIXING PARTS

Ref. No.	Part No.	Description
Y01	411 021 6603	SCR S-TPG BIN 3X8MM,CABINET
Y02	411 021 6603	SCR S-TPG BIN 3X8MM,CABINET
Y03	411 021 3503	SCR S-TPG BIN 3X10MM, CD MECHANISM
Y04	411 034 2708	SCR FLT 3X12MM,CD MECHANISM
Y05	411 021 3503	SCR S-TPG BRZ+FLG 3X10MM, CD MAIN PWB
Y06	411 021 3503	SCR S-TPG BIN 3X10MM, POWER AMP. PWB
Y07	411 021 3503	SCR S-TPG BIN 3X10MM, SPEAKER TERMINAL
Y08	411 021 5705	SCR S-TPG BIN 3X6MM, MOUNTING/PRE-AMP. PWB
Y11	411 001 3905	SCR S-TPG BIN 4X6MM, POWER TRANSFORMER
Y12	411 021 4005	SCR S-TPG BIN 3X12MM, FRONT PWB
Y13	411 021 4005	SCR S-TPG BIN 3X12MM, LED PWB
Y14	411 098 4700	SCR S-TPG BIN 2.3X8MM, CD PANEL
Y15	412 032 6408	SPECIAL SCREW, GEAR/TAPE DECK

PARTS LIST

Ref. No.	Part No.	Description
Y21	411 021 3503	SCR S-TPG BIN 3X10MM, HEAT-SINK/BOTTOM
Y22	411 021 4302	SCR S-TPG BIN 3X14MM, HEATSINK/BOTTOM
Y23	411 021 4104	SCR S-TPG BIN 3X12MM, BOTTOM/ANTENNA-TERMINAL,
Y24	411 021 5705	SCR S-TPG BIN 3X6MM, REGULATOR PWB
Y25	411 021 5705	SCR S-TPG BIN 3X6MM, SHIELD PLATE
Y26	411 021 4005	SCR S-TPG BIN 3X12MM, TAPE MECHANISM
Y27	411 025 2007	SCR S-TPG PAN 2X4MM, TAPE MECHANISM BRACKET
Y28	411 025 2007	SCR S-TPG PAN 2X4MM, TAPE MECHANISM BRACKET

ELECTRICAL PARTS

Ref. No.	Part No.	Description
61	⚠423 016 9803	FUSE 250V 0.63A (FU499)
62	⚠645 011 3802	TRANSFORMER,POWER,T0001
63	⚠614 255 2513	POWER CORD,AC (XE)
or	⚠614 233 8971	POWER CORD,AC (XE)
or	⚠614 023 3148	POWER CORD,AC (XE)
63	⚠645 008 9732	POWER CORD,AC (UK)
64	614 272 8352	HEAT SINK,POWER AMP.
CN381	614 274 2686	ASSY,WIRE,6P,HEAD LEAD
CN427	614 276 0185	CORD,1P CONNECTOR
CN428	614 276 0192	CORD,1P CONNECTOR
CN429	614 276 0208	CORD,1P CONNECTOR
CN488	645 012 0091	FLEXIBLE FLAT CABLE,9P, TUNER-PRE AMP
CN489	645 012 0107	FLEXIBLE FLAT CABLE,11P, DECK-PRE AMP

TUNER P.W.BOARD ASSY

Ref. No.	Part No.	Description
71	614 271 2849	ASSY,PWB,TUNER
C2152	403 082 0201	POLYPRO 470P J 100V
C2155	403 082 2205	POLYPRO 560P J 100V
C2457	403 106 1603	NP-ELECT 1U Q 50V
CN201	614 255 5750	TERMINAL,ANTENNA
CN202	645 011 9965	SOCKET,FPC 9P
CT251	645 004 2317	TRIMMER,30PF
CT252	614 007 6356	TRIMMER,11PF
D2151	407 091 5004	VARACTOR DI SVC321SPA-C-2
D2152	407 091 5004	VARACTOR DI SVC321SPA-C-2
D2451	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D2454	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D2455	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D2456	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D2461	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D2463	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D2464	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
IC231	409 312 4803	IC LA1832M
IC245	409 344 1009	IC LC72131M
L2151	614 255 5798	TRANS,RF,LW ANT
L2152	614 255 5781	TRANS,RF,MW ANT
L2153	614 255 5767	TRANS,OSC,MW
L2154	614 255 5774	TRANS,OSC,LW
L2301	645 004 0580	INDUCTOR,1M J
L2451	645 001 4581	INDUCTOR,100U K
Q2140	405 019 3903	TR 2SC536-G-SPA
or	405 017 9709	TR 2SC3330-U
or	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
or	405 014 5209	TR 2SC2458-GR
or	405 014 5407	TR 2SC2458-Y
Q2152	405 021 0600	TR 2SD1012-G-SPA
Q2153	405 021 0600	TR 2SD1012-G-SPA
Q2154	405 021 0600	TR 2SD1012-G-SPA
Q2155	405 021 0600	TR 2SD1012-G-SPA
Q2156	405 021 0600	TR 2SD1012-G-SPA
Q2157	405 026 9004	TR 2SK222-D
Q2201	405 016 0806	TR 2SC2839-E
Q2305	405 000 0904	TR DTA114YS
or	405 036 3702	TR 2SA1564
Q2310	405 016 0806	TR 2SC2839-E
Q2451	405 000 0904	TR DTA114YS
or	405 036 3702	TR 2SA1564
Q2452	405 000 0904	TR DTA114YS
or	405 036 3702	TR 2SA1564
Q2453	405 000 0904	TR DTA114YS
or	405 036 3702	TR 2SA1564
T2301	614 029 3906	MX COIL
or	614 255 8119	FILTER,LC
U2101	614 241 7447	TUNER,FM
X2301	645 010 0024	OSC,CERAMIC 456KHZ
or	614 246 0870	RESONATOR,456KHZ
X2451	614 229 2457	CRYSTAL,7.2MHZ
or	614 204 0317	CRYSTAL,7.2MHZ
or	614 240 1118	RESONATOR,7.2MHZ
XF221	614 240 2917	FILTER,CERAMIC,FM
or	614 254 3214	FILTER,FM
XF222	614 240 2917	FILTER,CERAMIC,FM
or	614 254 3214	FILTER,FM
XF231	614 246 0849	FILTER,AM
XF233	645 012 0138	DISCR,CERAMIC,10.75MHZ
or	645 012 2804	DISCR,CERAMIC,10.75MHZ
or	645 012 0374	DISCR,CERAMIC,10.75MHZ
or	645 012 2811	DISCR,CERAMIC,10.75MHZ

PARTS LIST

PRE-AMPLIFIER P.W.BOARD ASSY

Ref. No.	Part No.	Description
72	614 271 4454	ASSY,PWB,PRE-AMP
C4590	403 262 8607	DL-ELECT 0.047F Z 5.5V
CN452	645 012 0039	SOCKET,15P
CN453	645 011 9965	SOCKET,FPC 9P
CN454	645 006 0939	PLUG,6P
CN455	645 011 9972	SOCKET,FPC 11P
CN456	645 012 0022	PLUG,16P
D4591	407 099 5402	ZENER DIODE MTZJ6.2B
or	407 051 7208	ZENER DIODE GZS6.2Y
D4592	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D4691	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D4692	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D4695	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D4696	407 004 9709	DIODE DSK10C
IC451	409 353 8709	IC BU4052BCF
IC452	409 133 8103	IC NJM4558M-S
IC453	409 342 0608	IC BH3854FS
IC460	409 133 8103	IC NJM4558M-S
Q4546	405 012 8509	TR 2SC2021-R
or	405 057 6409	TR 2SC4038-R
Q4547	405 006 2704	TR 2SA937-R
or	405 064 0209	TR 2SA1561-R
Q4548	405 006 2704	TR 2SA937-R
or	405 064 0209	TR 2SA1561-R
Q4592	405 004 4502	TR 2SA608-F-NP
or	405 004 5004	TR 2SA608-G-NP
Q4593	405 004 4502	TR 2SA608-F-NP
or	405 004 5004	TR 2SA608-G-NP
Q4594	405 019 3903	TR 2SC536-G-SPA
or	405 017 9709	TR 2SC3330-U
or	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
or	405 014 5209	TR 2SC2458-GR
or	405 014 5407	TR 2SC2458-Y
S4591	614 215 9828	SWITCH,TACT,RESET

POWER AMPLIFIER P.W.BOARD ASSY

Ref. No.	Part No.	Description
73	614 273 0836	ASSY,PWB,POWER AMP
C4900	403 189 4706	ELECT 4700U M 35V
CN471	645 012 0015	PLUG,15P,PRE-AMP.
CN472	645 004 2720	PLUG,6P,POWER TRANSFORMER, SECONDARY
CN473	645 004 2737	PLUG,7P,PHONES
CN474	614 020 6562	SOCKET,4P,REGULATOR
or	614 223 9223	SOCKET,4P,REGULATOR
D4701	407 004 9709	DIODE DSK10C
D4702	407 004 9709	DIODE DSK10C
D4771	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D4772	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D4773	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D4774	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D4801	407 004 9709	DIODE DSK10C
D4802	407 004 9709	DIODE DSK10C
D4901	407 070 2109	ZENER DIODE GZS18X
or	407 099 7505	ZENER DIODE MTZJ18A
D4902	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D4903	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D4904	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D4906	407 051 7406	ZENER DIODE GZS6.8X
or	407 099 5600	ZENER DIODE MTZJ6.8A
D4907	407 051 6904	ZENER DIODE GZS5.6Y
or	407 127 3905	ZENER DIODE MTZJ5.6B
D4910	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D4911	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D4912	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D4913	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D4914	407 051 6003	ZENER DIODE GZS33X
or	407 099 9806	ZENER DIODE MTZJ33A
D4921	⚠407 127 1505	DIODE RBV-602LF-A
HS401	614 215 9347	HEAT SINK,FOR D4921
IC471	⚠409 245 5601	IC LA4705
IC472	409 211 6601	IC NJM4558L
IC473	409 211 6601	IC NJM4558L
Q4701	405 021 0600	TR 2SD1012-G-SPA
Q4740	405 019 3903	TR 2SC536-G-SPA
or	405 017 9709	TR 2SC3330-U
or	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
or	405 014 5209	TR 2SC2458-GR
or	405 014 5407	TR 2SC2458-Y
Q4741	405 019 3903	TR 2SC536-G-SPA
or	405 017 9709	TR 2SC3330-U
or	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
or	405 014 5209	TR 2SC2458-GR
or	405 014 5407	TR 2SC2458-Y
Q4765	405 075 8409	TR DTC144TS
or	405 105 7204	TR BA1L4Z
Q4766	405 075 8409	TR DTC144TS
or	405 105 7204	TR BA1L4Z

PARTS LIST

Ref. No.	Part No.	Description
Q4771	405 000 0508	TR DTA114ES
or	405 078 2305	TR BN1A4M
or	405 001 1108	TR RN2202
Q4801	405 021 0600	TR 2SD1012-G-SPA
Q4840	405 019 3903	TR 2SC536-G-SPA
or	405 017 9709	TR 2SC3330-U
or	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
or	405 014 5209	TR 2SC2458-GR
or	405 014 5407	TR 2SC2458-Y
Q4841	405 019 3903	TR 2SC536-G-SPA
or	405 017 9709	TR 2SC3330-U
or	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
or	405 014 5209	TR 2SC2458-GR
or	405 014 5407	TR 2SC2458-Y
Q4900	⚠405 053 0906	TR 2SD1668-Q
or	⚠405 022 7707	TR 2SD1668-R
or	⚠405 022 7806	TR 2SD1668-S
Q4902	405 004 4502	TR 2SA608-F-NP
or	405 004 5004	TR 2SA608-G-NP
Q4903	405 019 3903	TR 2SC536-G-SPA
or	405 017 9709	TR 2SC3330-U
or	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
or	405 014 5209	TR 2SC2458-GR
or	405 014 5407	TR 2SC2458-Y
Q4905	405 019 3903	TR 2SC536-G-SPA
or	405 017 9709	TR 2SC3330-U
or	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
or	405 014 5209	TR 2SC2458-GR
or	405 014 5407	TR 2SC2458-Y
Q4907	405 000 3806	TR DTC114YS
or	405 128 9001	TR RN1207
or	405 037 0809	TR 2SC4048
Q4908	⚠405 013 6801	TR 2SC2274-E
or	⚠405 013 7006	TR 2SC2274-F
or	⚠405 013 7204	TR 2SC2274K-E
or	⚠405 013 7303	TR 2SC2274K-F
Q4909	405 023 5306	TR 2SD400-F-MP
R4721	⚠402 004 5300	FUSIBLE RES 2.2 J- 1/4W
R4722	⚠402 004 5300	FUSIBLE RES 2.2 J- 1/4W
R4725	⚠402 044 6008	RESISTOR 0.1 J- 1/2W
R4726	⚠402 048 1702	RESISTOR 100 J- 1W
R4727	401 231 2106	MT FILM 22K DC 1/4W
R4728	401 231 2106	MT FILM 22K DC 1/4W
R4740	401 231 2304	MT FILM 56K DC 1/4W
R4741	401 231 2106	MT FILM 22K DC 1/4W
R4742	401 231 2205	MT FILM 47K DC 1/4W
R4743	401 024 9701	CARBON 12K JA 1/6W
R4821	⚠402 004 5300	FUSIBLE RES 2.2 J- 1/4W
R4822	⚠402 004 5300	FUSIBLE RES 2.2 J- 1/4W
R4825	⚠402 044 6008	RESISTOR 0.1 J- 1/2W
R4826	⚠402 048 1702	RESISTOR 100 J- 1W
R4827	401 231 2106	MT FILM 22K DC 1/4W
R4828	401 231 2106	MT FILM 22K DC 1/4W
R4840	401 231 2304	MT FILM 56K DC 1/4W
R4841	401 231 2106	MT FILM 22K DC 1/4W
R4842	401 231 2205	MT FILM 47K DC 1/4W
R4908	⚠402 047 0409	RESISTOR 47 J- 1/2W
R4913	⚠402 004 4303	FUSIBLE RES 10 J- 1/4W
R4922	⚠402 023 1703	FUSIBLE RES 100 J- 1/4W
R4923	⚠402 023 1703	FUSIBLE RES 100 J- 1/4W
SA401	411 021 0405	SCR S-TPG BIN 3X8MM

SPEAKER TERMINAL P.W.BOARD ASSY

Ref. No.	Part No.	Description
74	614 273 0874	ASSY,PWB,SPEAKER TERMINAL
C4781	403 057 2803	POLYESTER 0.1U K 50V
C4782	403 060 8205	POLYESTER 0.033U K 50V
C4881	403 057 2803	POLYESTER 0.1U K 50V
C4882	403 057 2803	POLYESTER 0.1U K 50V
CN478	645 006 1875	PLUG,2P,SPEAKER L-CH
CN488	645 006 1875	PLUG,2P,SPEAKER R-CH

REGULATOR, DC 12V P.W.BOARD ASSY

Ref. No.	Part No.	Description
75	614 275 0926	ASSY,PWB,REGULATOR
CN497	614 020 6562	SOCKET,4P,AMP
or	614 223 9223	SOCKET,4P,AMP
D4970	407 051 4405	ZENER DIODE GZS13Y
or	407 099 6805	ZENER DIODE MTZJ13B
Q4970	405 019 3903	TR 2SC536-G-SPA
or	405 017 9709	TR 2SC3330-U
or	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
or	405 014 5209	TR 2SC2458-GR
or	405 014 5407	TR 2SC2458-Y
Q4971	⚠405 035 7107	TR 2SD1913-R
or	⚠405 035 7206	TR 2SD1913-S
or	⚠405 095 1602	TR 2SD2061-E
or	⚠405 095 1701	TR 2SD2061-F
Q4972	405 000 3806	TR DTC114YS
or	405 128 9001	TR RN1207
or	405 037 0809	TR 2SC4048
R4970	⚠402 048 1504	RESISTOR 1 J- 1W

POWER TRANSFORMER, PRIMARY P.W.BOARD ASSY

Ref. No.	Part No.	Description
76	614 273 0850	ASSY,PWB,TRANSFORMER, PRIMARY
F4999	⚠614 229 0422	INDUCTOR,FERITE
FCLP5	645 006 4760	HOLDER,FUSE
FCLP6	645 006 4760	HOLDER,FUSE
WR498	614 017 8203	TERMINAL BOARD
WR499	614 017 8203	TERMINAL BOARD

POWER TRANSFORMER, SECONDARY P.W.BOARD ASSY

Ref. No.	Part No.	Description
77	614 273 0867	ASSY,PWB,TRANSFORMER, SECONDARY
CN496	614 020 6586	SOCKET,6P,AMP
or	614 223 9247	SOCKET,6P,AMP
CN499	614 271 2177	ASSY,WIRE,6P,POWER AMP
R4961	⚠402 044 0907	FUSIBLE RES 1.0 J- 1/4W

PHONES P.W.BOARD ASSY

Ref. No.	Part No.	Description
78	614 273 0812	ASSY,PWB,PHONES
CN415	645 011 6384	JACK,PHONE D3.6,PHONES
CN416	614 020 6593	SOCKET,7P,POWER AMP
or	614 223 9254	SOCKET,7P,POWER AMP
CN417	614 272 7683	ASSY,WIRE,7P,POWER AMP

PARTS LIST

TAPE DECK P.W.BOARD ASSY

Ref. No.	Part No.	Description
79	614 273 0843	ASSY,PWB,TAPE DECK
C3305	403 058 9900	POLYESTER 0.018U K 50V
C3306	403 058 1102	POLYESTER 1500P K 50V
CN301	645 011 9972	SOCKET,FPC 11P,PRE
CN302	614 020 6562	SOCKET,4P
or	614 223 9223	SOCKET,4P
CN303	645 012 5829	PLUG,2P,HIGH_SPEED
CN372	645 006 0861	PLUG,7P
CN373	645 005 8226	PLUG,3P
D3501	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D3502	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D3505	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D3551	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D3552	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D3901	407 051 6805	ZENER DIODE GZS5.1Z
or	407 063 8705	ZENER DIODE MTZJ5.1C
D3951	407 051 6805	ZENER DIODE GZS5.1Z
or	407 063 8705	ZENER DIODE MTZJ5.1C
IC311	409 353 8808	IC BU4094BCF
IC351	409 260 9905	IC HA12134AF
IC371	409 361 9408	IC HA12185NT
IC372	409 241 5308	IC BA3126N
L3301	645 009 0615	TRANS,OSC,85KHZ
L3702	645 014 2185	INDUCTOR,22M K
L3802	645 014 2185	INDUCTOR,22M K
Q3101	405 007 6701	TR 2SB598-F-NP
or	405 007 6404	TR 2SB598-E-NP
or	405 007 6909	TR 2SB598-G-NP
Q3102	405 000 3806	TR DTC114YS
or	405 128 9001	TR RN1207
or	405 037 0809	TR 2SC4048
or	405 068 4807	TR BA1A4P
Q3103	405 004 4502	TR 2SA608-F-NP
or	405 004 5004	TR 2SA608-G-NP
Q3104	405 000 3806	TR DTC114YS
or	405 128 9001	TR RN1207
or	405 037 0809	TR 2SC4048
or	405 068 4807	TR BA1A4P
Q3165	405 000 3806	TR DTC114YS
or	405 128 9001	TR RN1207
or	405 037 0809	TR 2SC4048
or	405 068 4807	TR BA1A4P
Q3166	405 000 3806	TR DTC114YS
or	405 128 9001	TR RN1207
or	405 037 0809	TR 2SC4048
or	405 068 4807	TR BA1A4P
Q3167	405 000 3806	TR DTC114YS
or	405 128 9001	TR RN1207
or	405 037 0809	TR 2SC4048
or	405 068 4807	TR BA1A4P

Ref. No.	Part No.	Description
Q3301	405 008 2405	TR 2SB698-F
or	405 008 2306	TR 2SB698-E
or	405 008 2504	TR 2SB698-G
Q3302	405 019 3903	TR 2SC536-G-SPA
or	405 017 9709	TR 2SC3330-U
or	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
or	405 014 5209	TR 2SC2458-GR
or	405 014 5407	TR 2SC2458-Y
Q3305	405 024 9907	TR 2SD734-F
or	405 025 0200	TR 2SD734-G
Q3306	405 077 8100	TR 2SA1437
Q3501	405 019 3903	TR 2SC536-G-SPA
or	405 017 9709	TR 2SC3330-U
or	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
or	405 014 5209	TR 2SC2458-GR
or	405 014 5407	TR 2SC2458-Y
Q3503	405 019 3903	TR 2SC536-G-SPA
or	405 017 9709	TR 2SC3330-U
or	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
or	405 014 5209	TR 2SC2458-GR
or	405 014 5407	TR 2SC2458-Y
Q3504	405 000 3806	TR DTC114YS
or	405 128 9001	TR RN1207
or	405 037 0809	TR 2SC4048
or	405 068 4807	TR BA1A4P
Q3551	405 019 3903	TR 2SC536-G-SPA
or	405 017 9709	TR 2SC3330-U
or	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
or	405 014 5209	TR 2SC2458-GR
or	405 014 5407	TR 2SC2458-Y
VR301	645 006 2582	VR,SEMI,2K N
VR302	645 006 2582	VR,SEMI,2K N
VR351	614 250 7247	POTENTIOMETER,10K B

FRONT P.W.BOARD ASSY

Ref. No.	Part No.	Description
80	614 271 4423	ASSY,PWB,FRONT
BR421	614 271 3679	HOLDER,FL
CN401	614 274 7452	ASSY,CONNECTOR-S,6P
CN431	645 012 0046	SOCKET,16P,FRONT/PRE-AMP.
CN433	645 009 0059	PLUG,10P,FRONT-CD
CN434	645 009 0059	PLUG,10P,FRONT-CD
CN435	614 274 7445	ASSY,CONNECTOR-S,11P, TAPE DECK MECHANISM
D4201	408 019 9401	LED SLZ-381B-09-AB-T1, CENTER LED1
D4202	408 019 9401	LED SLZ-381B-09-AB-T1, CENTER LED2
D4203	408 019 9401	LED SLZ-381B-09-AB-T1, CENTER LED3
D4204	408 019 9401	LED SLZ-381B-09-AB-T1, CENTER LED4
D4205	408 019 9401	LED SLZ-381B-09-AB-T1, CENTER LED5
D4206	408 015 0402	LED SLZ-181B-06-AB-T2, REC LED
D4207	408 015 5100	LED SLP-381B-51-AB, VOL UP LED 1
D4208	408 015 5100	LED SLP-381B-51-AB, VOL UP LED 2

PARTS LIST

Ref. No.	Part No.	Description
D4209	408 015 5100	LED SLP-381B-51-AB, VOL DOWN LED 1
D4210	408 015 5100	LED SLP-381B-51-AB, VOL DOWN LED 2
D4211	408 014 7204	LED SLP-181B-51-AB, POWER LED 1
D4212	408 014 7204	LED SLP-181B-51-AB, POWER LED2
D4245	408 014 7204	LED SLP-181B-51-AB, STAND BY LED
D4250	407 003 4507	DIODE DAP202K
D4260	407 051 5907	ZENER DIODE GZS3.9Z
or	407 099 4603	ZENER DIODE MTZJ3.9B
D4301	407 003 4507	DIODE DAP202K
D4302	407 003 4507	DIODE DAP202K
FL430	645 011 3819	FLUORESCENT TUBE,FL DISPLAY
IC430	410 242 5006	IC M38184M8-173FP
IC431	409 346 2301	IC BU2090F
L4301	645 001 4581	INDUCTOR,100U K
Q4230	405 064 6201	TR 2SB1295-5
or	405 064 6300	TR 2SB1295-6
or	405 064 6409	tr 2SB1295-7
Q4231	405 064 6201	TR 2SB1295-5
or	405 064 6300	TR 2SB1295-6
or	405 064 6409	tr 2SB1295-7
Q4232	405 000 3608	TR DTC114YK
or	405 113 6008	TR FA1A4P
Q4233	405 000 3608	TR DTC114YK
or	405 113 6008	TR FA1A4P
Q4250	405 014 4509	TR 2SC2412K-R
or	405 011 1006	TR 2SC1623-L6
Q4260	405 002 0308	TR 2SA1037K-R
or	405 005 5508	TR 2SA812-M6
or	405 002 6706	TR 2SA1179-M6
S4300	614 240 1002	SWITCH,TACT,VOLUME(+)
S4301	614 240 1002	SWITCH,TACT,VOLUME(-)
S4302	614 240 1002	SWITCH,TACT,TUNE(+)/ COMPU.REC HIGH
S4303	614 240 1002	SWITCH,TACT,TUNE(-)/ COMPU.REC LOW
S4304	614 240 1002	SWITCH,TACT,REC PAUSE
S4305	614 240 1002	SWITCH,TACT,REV MODE
S4306	614 240 1002	SWITCH,TACT,BASSXPANDER
S4307	614 240 1002	SWITCH,TACT,SOUND PRESET
S4309	614 240 1002	SWITCH,TACT,SOUND PRESET
S4310	614 240 1002	SWITCH,TACT,TAPE DEC,FWD
S4311	614 240 1002	SWITCH,TACT,TAPE DEC,REV
S4312	614 240 1002	SWITCH,TACT,CD TRACK, F.FWD,TAPE FWD
S4313	614 240 1002	SWITCH,TACT,CD TRACK, TAPE REW
S4314	614 240 1002	SWITCH,TACT,TUNER BAND
S4315	614 240 1002	SWITCH,TACT,MEMORY
S4316	614 240 1002	SWITCH,TACT,TIMER
S4317	614 240 1002	SWITCH,TACT,CLOCK
S4318	614 240 1002	SWITCH,TACT,FUNCTION
S4320	614 240 1002	SWITCH,TACT,CD PLAY/PAUSE
S4321	614 240 1002	SWITCH,TACT,CD/TAPE,STOP
S4322	614 240 1002	SWITCH,TACT,POWER
SE430	407 138 4700	PHOTO DIODE SPS-420-1, IR
X4241	614 219 7936	RESONATOR,XTAL,32.768HZ
X4242	614 215 5523	RESONATOR,CERAMIC,4.19MHZ

CD MAIN P.W.BOARD ASSY

Ref. No.	Part No.	Description
81	614 274 6943	ASSY,PWB,CD MAIN
C1153	403 058 5209	POLYESTER 0.15U K 50V
CN101	645 005 8110	PLUG,4P,TP1-4
CN111	645 010 1472	SOCKET,FPC 13P,CD PICKUP
CN113	645 005 8127	PLUG,6P
CN114	645 005 9292	SOCKET,5P
CN131	645 009 0134	SOCKET,10P
CN132	645 009 0134	SOCKET,10P
CN198	614 274 7438	ASSY,CONNECTOR-S,6P
D1371	407 063 8606	ZENER DIODE MTZJ5.1A
or	407 051 6607	ZENER DIODE GZS5.1X
D1601	⚠407 004 9709	DIODE DSK10C
D1602	⚠407 004 9709	DIODE DSK10C
D1603	⚠407 004 9709	DIODE DSK10C
IC101	409 327 3402	IC CXA1782BQ
IC102	⚠409 317 8509	IC BA6398FP
IC104	409 322 2707	IC CXD2518Q
IC106	409 039 7408	IC NJM4558D
or	409 018 4305	IC LA6458D
IC132	⚠409 114 4803	IC LB1641
L1401	645 001 4550	FILTER,10U
Q1101	405 004 4601	TR 2SA608-F-SPA
or	405 003 5401	TR 2SA1317-U
or	405 006 1905	TR 2SA933S-S
or	405 006 1806	TR 2SA933S-R
or	405 002 1305	TR 2SA1048-Y
or	405 002 1107	TR 2SA1048-GR
Q1102	405 004 4601	TR 2SA608-F-SPA
or	405 003 5401	TR 2SA1317-U
or	405 006 1905	TR 2SA933S-S
or	405 006 1806	TR 2SA933S-R
or	405 002 1305	TR 2SA1048-Y
or	405 002 1107	TR 2SA1048-GR
Q1201	405 009 5207	TR 2SB927-S
or	405 001 9302	TR 2SA1020-Y
Q1202	405 008 6809	TR 2SB808-F-SPA
Q1211	405 000 3806	TR DTC114YS
or	405 128 9001	TR RN1207
or	405 037 0809	TR 2SC4048
Q1321	405 019 3903	TR 2SC536-G-SPA
or	405 017 9709	TR 2SC3330-U
or	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
or	405 014 5209	TR 2SC2458-GR
or	405 014 5407	TR 2SC2458-Y
Q1371	405 000 0508	TR DTA114ES
or	405 078 2305	TR BN1A4M
or	405 001 1108	TR RN2202
R1371	⚠402 049 2500	RESISTOR 18 J- 2W
VR101	645 006 2520	VR,SEMI,100K N
X1401	614 254 6932	RESONATOR,CERAMIC,33.86MHZ
or	614 259 2137	RESONATOR,CERAMIC,33.86MHZ
LG101	614 051 9785	LUG,GROUND

DISC LED P.W.BOARD ASSY

Ref. No.	Part No.	Description
82	614 271 4430	ASSY,DISC LED
CN400	645 005 8127	PLUG,6P
D4001	408 015 5100	LED SLP-381-51-AB
D4002	408 015 5100	LED SLP-381-51-AB
D4003	408 015 5100	LED SLP-381-51-AB
D4004	408 015 5100	LED SLP-381-51-AB
S4001	614 240 1002	SWITCH,TACT,CD OPEN/CLOSE

SPEAKER BOX ASSY (SX-MS3L/XE, SX-MS3R/XE) (XE)

Ref. No.	Part No.	Description
91	614 274 9586	CABINET,FRONT,LEFT (SX-MS3L)
92	614 274 9593	CABINET,FRONT,RIGHT (SX-MS3R)
93	614 274 9456	ASSY,CABINET,REAR
94	614 272 9595	ASSY,GRILLE,PLATE,LEFT (SX-MS3L)
95	614 272 9601	ASSY,GRILLE,PLATE,RIGHT (SX-MS3R)
96	614 258 1162	CORD,2PCONNECTOR
97	645 011 9934	SPEAKER,4 OHM
98	419 002 0206	PIEZO BUZZER 7MB-20-5R5
99	614 228 5251	CUSHION,10X10X11.5MM
Y91	411 021 4906	SCR S-TPG BIN 3X20MM, CABINET/REAR
Y92	411 021 4005	SCR S-TPG BIN 3X12MM, GRILLE/CABINET
Y93	411 020 9100	SCR S-TPG BRZ+FLG 3X12MM, SPEAKER/GRILLE
	645 012 4648	POLY SHEET,900X400MM

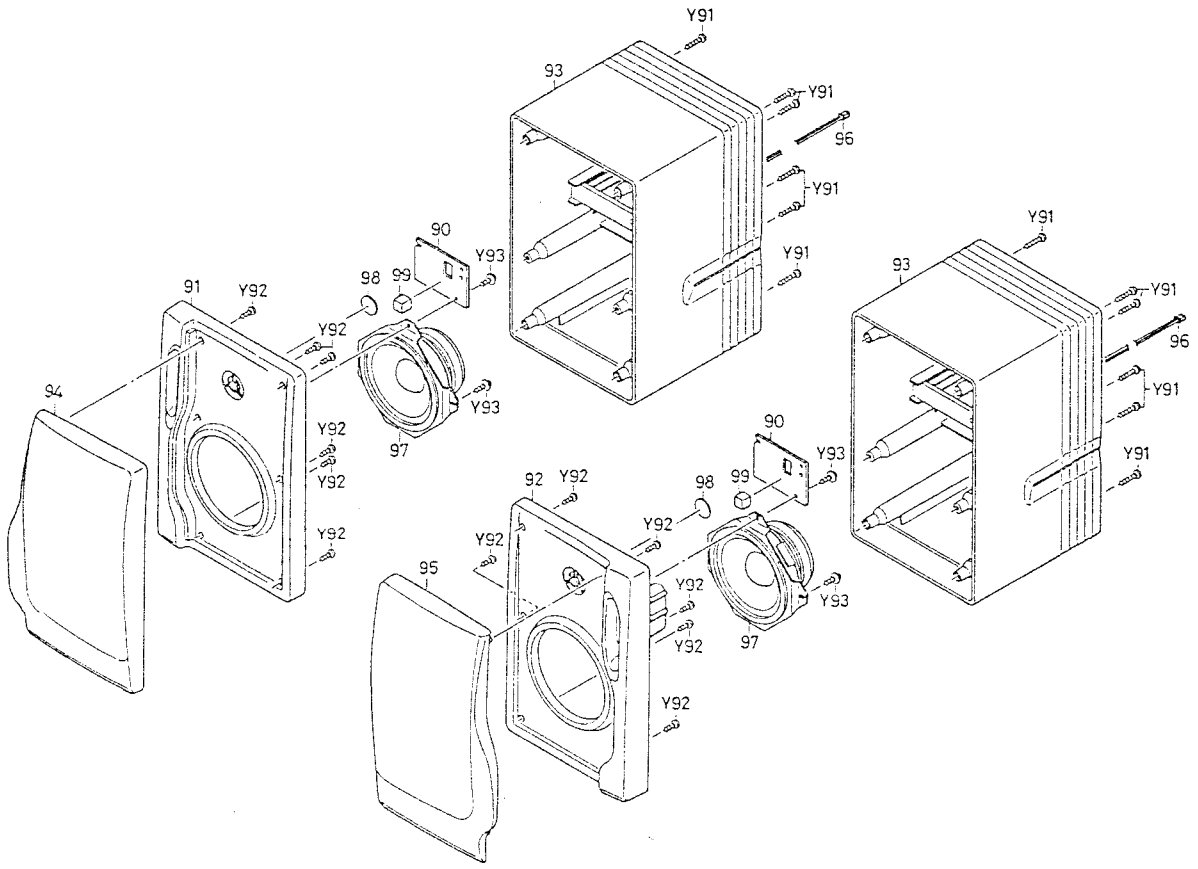
SPEAKER BOX ASSY (SX-MS3L/UK, SX-MS3R/UK) (UK)

Ref. No.	Part No.	Description
91	614 274 9586	CABINET,FRONT,LEFT (SX-MS3L)
92	614 274 9593	CABINET,FRONT,RIGHT (SX-MS3R)
93	614 274 9456	ASSY,CABINET,REAR
94	614 272 9595	ASSY,GRILLE,PLATE,LEFT (SX-MS3L)
95	614 272 9601	ASSY,GRILLE,PLATE,RIGHT (SX-MS3R)
96	614 258 1162	CORD,2PCONNECTOR
97	645 011 9934	SPEAKER,4 OHM
98	419 002 0206	PIEZO BUZZER 7MB-20-5R5
99	614 228 5251	CUSHION,10X10X11.5MM
Y91	411 021 4906	SCR S-TPG BIN 3X20MM, CABINET/REAR
Y92	411 021 4005	SCR S-TPG BIN 3X12MM, GRILLE/CABINET
Y93	411 020 9100	SCR S-TPG BRZ+FLG 3X12MM, SPEAKER/GRILLE
	614 211 3455	SHEET,900X400MM

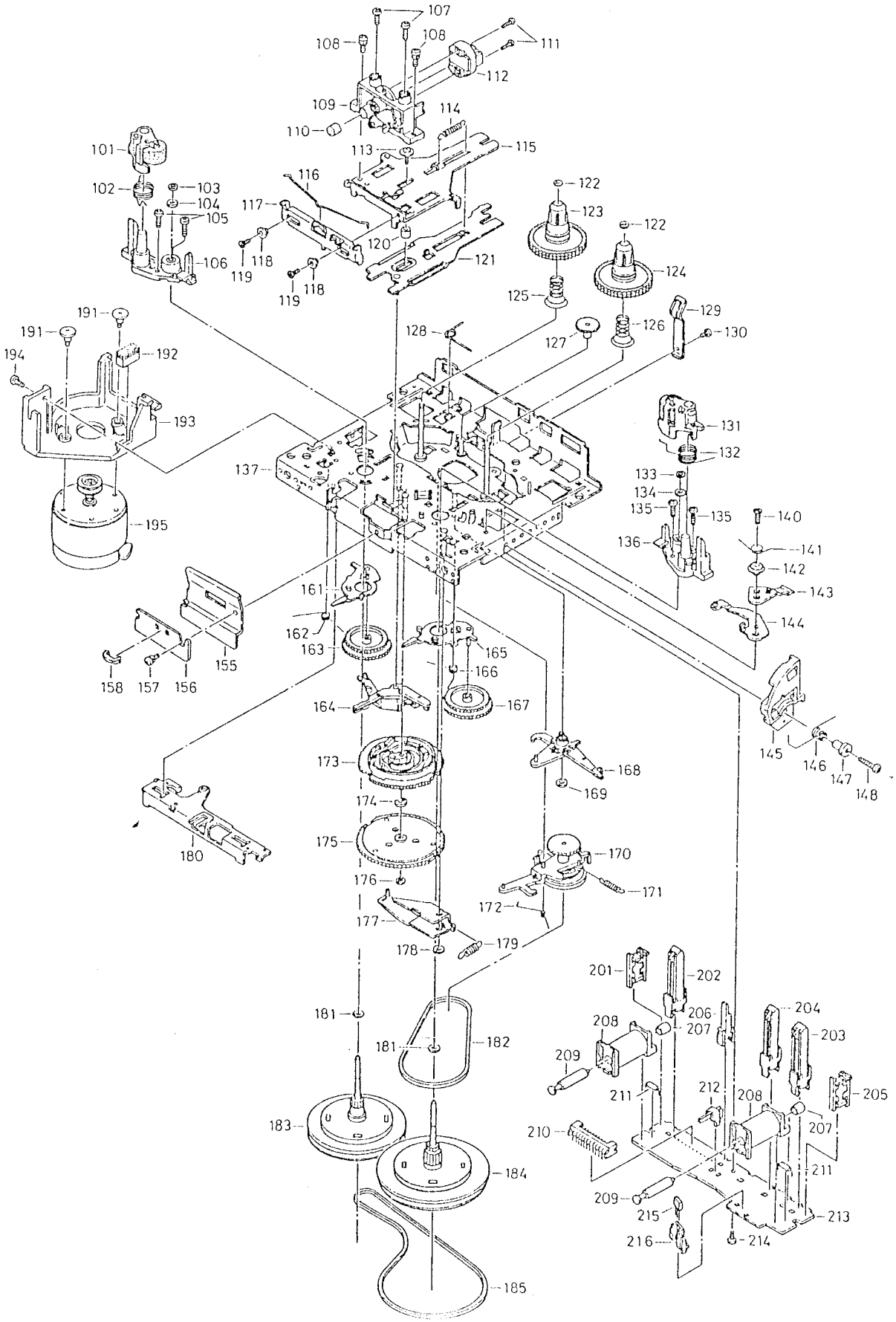
SPEAKER NETWORK P.W.BOARD ASSY

Ref. No.	Part No.	Description
90	614 278 4617	PWB,SPEAKER NETWORK
C9001	403 086 5509	NP-ELECT 2.2U M 50V
L9001	614 027 9214	CHOKE COIL
R9001	402 045 2603	RESISTOR 4.7 J- 1W

EXPLODED VIEW (SPEAKER BOX)



EXPLODED VIEW (TAPE MECHANISM)



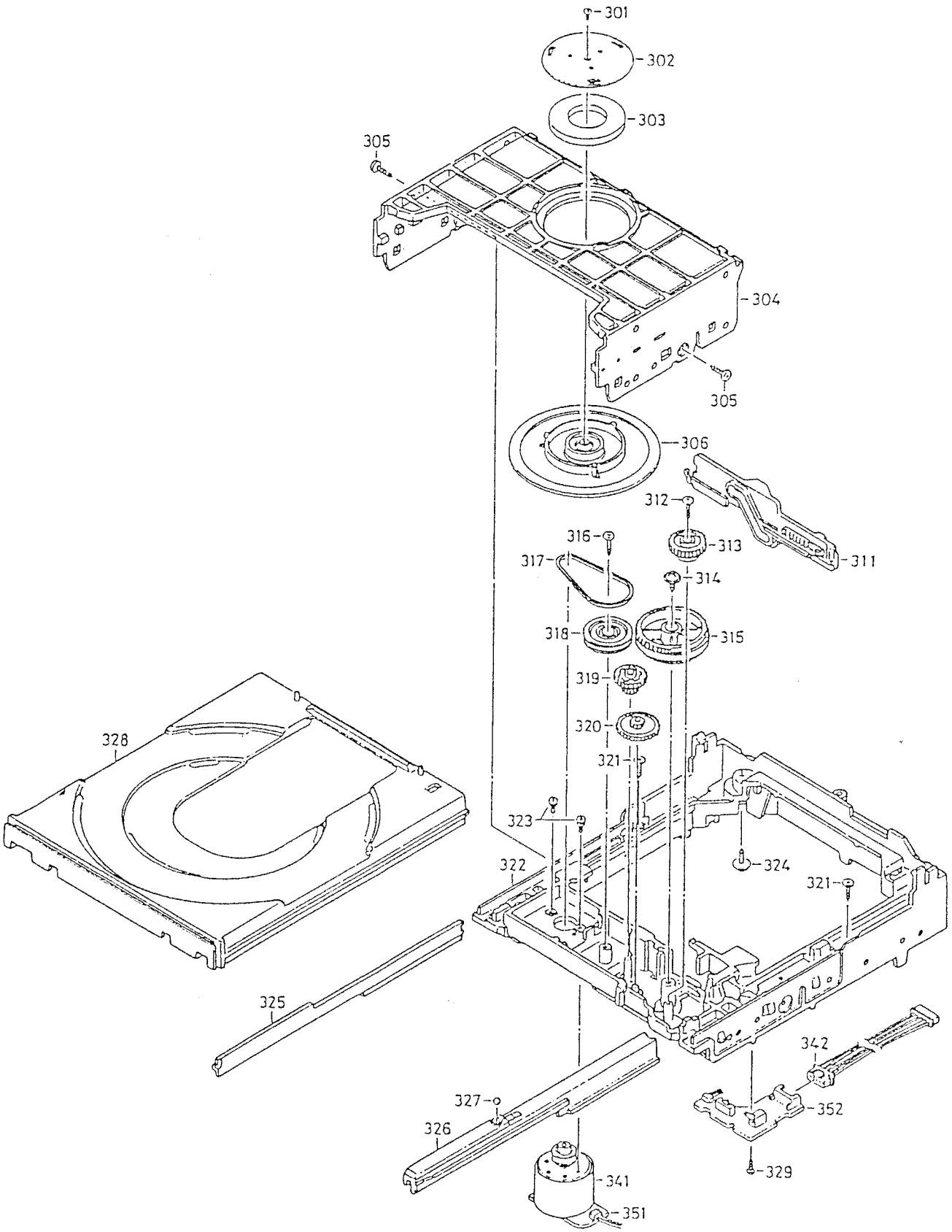
PARTS LIST

TAPE MECHANISM (TM-MS3TN-SH)

Ref. No.	Part No.	Description
101	645 012 1531	ASSY,PINCH ROLLER ARM(R)
102	645 012 1401	P ARM(R)SPRING
103	645 009 7751	NYLON WASHER 2.05X3.5X0.5MM
104	645 009 8031	HL WASHER 1.7X3.5X0.5MM
105	645 012 1906	C TAPP SCREW M2X5
106	645 012 1692	ASSY,FL METAL(R)
107	645 012 1920	(+)(-)SCREW(SMALL)M2X6
108	645 012 1890	TAMS SCREW M2X5
109	645 012 1494	ASSY,HEAD BASE
110	645 012 1364	SPACER,R/P & E HEAD
111	645 012 1883	HEAD COLLAR SCREW(S), R/P & E HEAD
112	614 237 8670	HEAD,R/P&E,ROTARY
113	645 009 7720	CAMERA S TAP SCREW G 2X5MM
114	645 012 1371	RC SPRING
115	645 012 1463	HEAD PANEL(A)
116	645 012 1517	PINCH ROLLER SPRING
117	645 012 1388	CHP LEVER
118	645 012 1340	CHP LEVER COLLAR
119	645 009 7027	CAMERA TS M SCREW 1.7X3MM
120	645 009 8895	PANEL COLLAR
121	645 012 1500	ASSY,HEAD PANEL(B)
122	645 009 7072	HL WASHER CUT 1.4X3.1X0.5MM
123	645 012 1623	ASSY,TAKE-UP REEL(R)
124	645 012 1616	ASSY,TAKE-UP REEL(F)
125	645 012 1593	BT SPRING(R),BACK TENSION
126	645 012 1609	BT SPRING(F),BACK TENSION
127	645 012 1555	FF GEAR
128	645 012 1470	HEAD PANEL SPRING
129	645 012 1449	PACK SPRING,CASSETTE
130	645 011 1242	C TAPP SCREW M2X3
131	645 012 1524	ASSY,PINCH ROLLER ARM(F)
132	645 012 1395	P ARM(F)SPRING
133	645 009 7744	NYLON WASHER 2.1X3.5X0.5MM
134	645 012 1951	HL WASHER CUT 1.8X4X0.5MM
135	645 012 1906	C TAPP SCREW M2X5
136	645 012 1685	ASSY,FL METAL(F)
137	645 012 2514	ASSY,CHASSIS
140	645 009 7713	CAMERA S TAP SCREW G 2X6MM
141	645 009 7676	E STOPPER SPRING(F)
142	645 009 8017	E STOPPER COLLAR
143	645 009 7690	E STOPPER A(F)S
144	645 009 7638	E STOPPER B(F)
145	645 009 7652	LOCK LEVER(R)
146	645 009 7645	E LEVER SPRING(R)
147	645 012 1746	LOCK LEVER COLLAR
148	645 009 7706	C TAP BIND SCREW 2.3X10MM
155	645 012 1487	SHIELD PLATE,ROTARY HEAD
156	645 009 6907	RELAY BOARD,HEAD LEAD

Ref. No.	Part No.	Description
157	645 012 1913	S TAMP TAPP SCREW M2X5
158	645 012 1357	WIRE CLAMP,ROTARY HEAD
161	645 012 1647	ASSY,T GEAR ARM(R)
162	645 012 1586	TG ARM(R)SPRING
163	645 012 1548	T GEAR
164	645 012 1777	M TRIGGER ARM
165	645 012 1630	ASSY,T GEAR ARM(F)
166	645 012 1579	TG ARM(F)SPRING
167	645 012 1548	T GEAR
168	645 012 1562	RF TRIGGER ARM
169	645 012 1937	HL WASHER CUT 2.1X5X0.4MM
170	645 012 1678	ASSY,RF CLUTCH
171	645 012 1654	RF PULLEY ARM SPRING
172	645 012 1814	TRIGGER ARM SPRING
173	645 012 1760	M GEAR
174	645 012 1876	E RING S2.0
175	645 012 1791	RF CAM GEAR
176	645 012 1944	HLW CUT 1.55X3.5X0.5MM
177	645 012 1784	P KICK LEVER
178	645 012 1937	HL WASHER CUT 2.1X5X0.4MM
179	645 012 1432	PK LEVER SPRING
180	645 012 1753	CH SLIDE LEVER
181	645 009 7768	HL WASHER 2.3X3.8X0.13MM
182	645 012 1661	RF BELT
183	645 012 1715	ASSY,FLYWHEEL(R)
184	645 012 1708	ASSY,FLYWHEEL(F)
185	645 009 6990	MAIN BELT
191	645 011 3727	MOTOR COLLER SCREW
192	645 012 1333	MAT,MOTOR
193	645 012 1722	MOTOR BRACKET
194	645 012 1906	C TAPP SCREW M2X5
195	614 279 4807	MOTOR ASSY(WITH PULLEY)
201	645 012 1845	P BASE STUD
202	645 011 1631	LEAF SWITCH,UN-REC"A",S5
203	645 011 1631	LEAF SWITCH,UN-REC"B",S6
204	645 011 1631	LEAF SWITCH,PACK,S2
205	645 012 1845	P BASE STUD
206	645 012 1869	LEAF SWITCH,PLAY,S4
207	645 012 1425	PLUNGER HOLDER,SOLENOID
208	645 012 1807	SOLENOID,PL1,PL2
209	645 012 1418	PLUNGER,SOLENOID
210	645 006 0984	PLUG,11P
211	407 004 9105	DIODE DSF10C (D1,D2)
212	645 012 1852	LEAF SWITCH,F.FWD,S3
213	645 012 1821	P BASE,MECHANISM PWB
214	645 009 2312	C TAP SCREW M2X4
215	409 128 5209	IC LB9051A (IC1)
216	645 012 1838	IC PROTECTOR

EXPLODED VIEW (CD MECHANISM, LOADING)



CD MECHANISM (PM-CDLMSS21SH)

Ref. No.	Part No.	Description
301	411 162 1901	SCR S-TPG PAN PCS 2X3MM, PLATE FIX
302	614 226 6885	PLATE,MAGNET FIX
or	614 233 0227	PLATE,MAGNET FIX
303	614 262 8904	MAGNET,CHUCK
304	614 237 7017	MOUNT-M,CHUCK MOUNTING
or	614 255 2605	MOUNT-M,CHUCK MOUNTING
305	411 021 3107	SCR S-TPG BIN 2.6X8MM, MOUNT-M FIX
306	614 228 5848	ASSY,PULLEY,CHUCK
311	614 237 7208	SLIDE,BASE UP/DOWN
312	412 047 3904	SPECIAL SCREW, LOADING GEAR FIX
313	614 237 7079	GEAR,LOADING GEAR
314	411 020 9902	SCR S-TPG BRZ+FLG 3X8MM, GEAR FIX
315	614 237 7062	GEAR,LOADING CAM GEAR
316	411 021 3107	SCR S-TPG BIN 2.6X8MM, PULLEY FIX
317	614 237 7178	BELT,SQUARE,LOADING
318	614 237 7161	PULLEY,LOADING RELAY PULLEY
319	614 237 7048	GEAR,LOADING RETARD GEAR 1
320	614 237 7055	GEAR,LOADING RETARD GEAR 2
321	412 047 3904	SPECIAL SCREW,TRAY GUIDE FIX
322	614 237 6973	CHASSIS,LOADING CHASSIS
or	614 255 2575	CHASSIS,LOADING CHASSIS
323	411 044 7502	SCR PAN+SW 2X5MM, LOADING MOTOR FIX
324	411 020 9803	SCR S-TPG BRZ+FLG 3X6MM, CHASSIS SUB FIX
325	614 237 7192	SLIDE,TRAY GUIDE(L)
or	614 255 3954	SLIDE,TRAY GUIDE(L)
326	614 237 7185	SLIDE,TRAY GUIDE(R)
or	614 255 3947	SLIDE,TRAY GUIDE(R)
327	614 118 5927	STEEL BALL, TRAY GUIDE(R) LOCK
328	614 237 7215	TABLE,LOADING,TRAY
or	614 255 2612	TABLE,LOADING,TRAY
329	411 022 7807	SCR S-TPG PAN 2X6MM, SWITCH PWB FIX
341	645 007 7906	ASSY,MOTOR,LOADING MOTOR
342	614 275 3002	ASSY,WIRE,5P,SWITCH PWB
401	614 265 7881	ASSY,CHASSIS,BASE MECHA
401-1	614 216 9841	TURNTABLE
or	614 238 0413	TURNTABLE
401-2	411 044 7502	SCR PAN+SW 2X5MM, SPINDLE MOTOR
401-3	614 255 2582	CHASSIS,BASE MECHANISM
401-4	412 032 0208	SPECIAL WASHER
401-5	645 007 7821	COMMUTATE MOTOR,SPINDLE

Ref. No.	Part No.	Description
402	411 044 8004	SCR PAN+SW 2X8MM, SLED MOTOR FIX
403	614 237 7031	CUSHION,RUBBER, BASE MECHANISM FLOATING
404	614 237 7024	SHAFT,PICK UP RAIL
or	614 277 8029	SHAFT,PICK UP RAIL
405	411 152 4301	SCR S-TPG PAN PLS 1.7X6MM
406	614 262 2599	GEAR,PICK RACK GEAR
407	614 238 6934	SPRING,COMP,PICK RACK GEAR
408	645 006 7983	PICKUP,LASER,PICK UP
409	645 009 9953	FLEXIBLE FLAT CABLE,13P, PICK UP
410	614 237 7093	GEAR,SLED RETARD GEAR 1
411	614 237 7109	GEAR,SLED RETARD GEAR 2
412	614 237 7116	GEAR,SLED GEAR
413	412 047 3904	SPECIAL SCREW,SLED GEAR FIX
414	614 275 3019	ASSY,WIRE,P, BASE MECHANISM PCB
415	614 247 4907	SPRING,COMP, BASE MECHANISM FLOATING
416	614 237 7000	CHASSIS,SUB, BASE MECHANISM MOUNTING
or	614 255 2599	CHASSIS,SUB, BASE MECHANISM MOUNTING
417	411 021 3107	SCR S-TPG BIN 2.6X8MM, BASE MECHANISM FIX
418	412 044 3907	SPECIAL WASHER, BASE MECHANISM FIX
441	645 007 7814	ASSY,MOTOR, SLED MOTOR

LOADING MOTOR P.W.BOARD ASSY

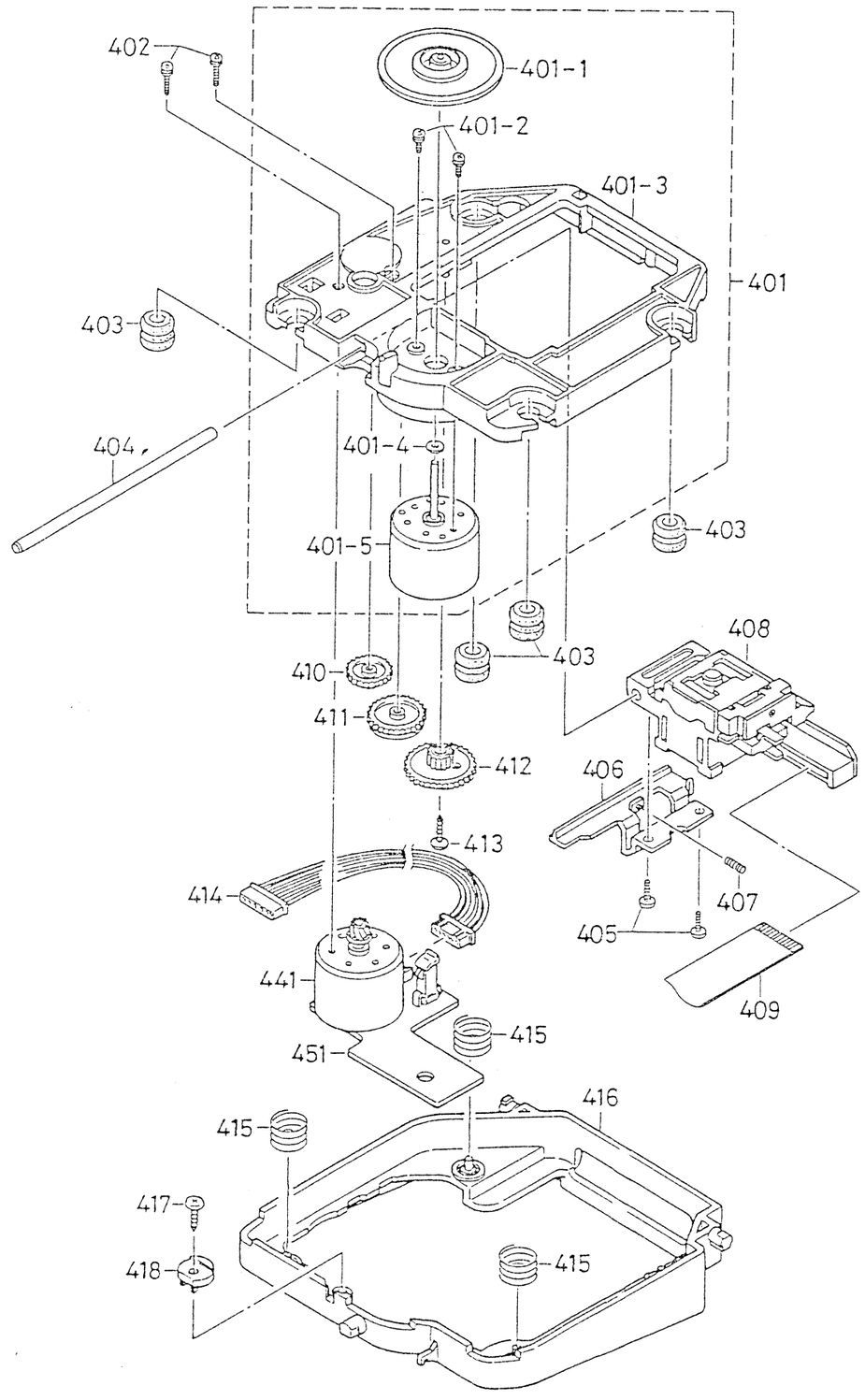
Ref. No.	Part No.	Description
351	614 254 0657	ASSY PCB,LOADING MOTOR
C599	403 121 9509	CERAMIC 0.1U Z 50V

OPEN / CLOSE SWITCH P.W.BOARD ASSY

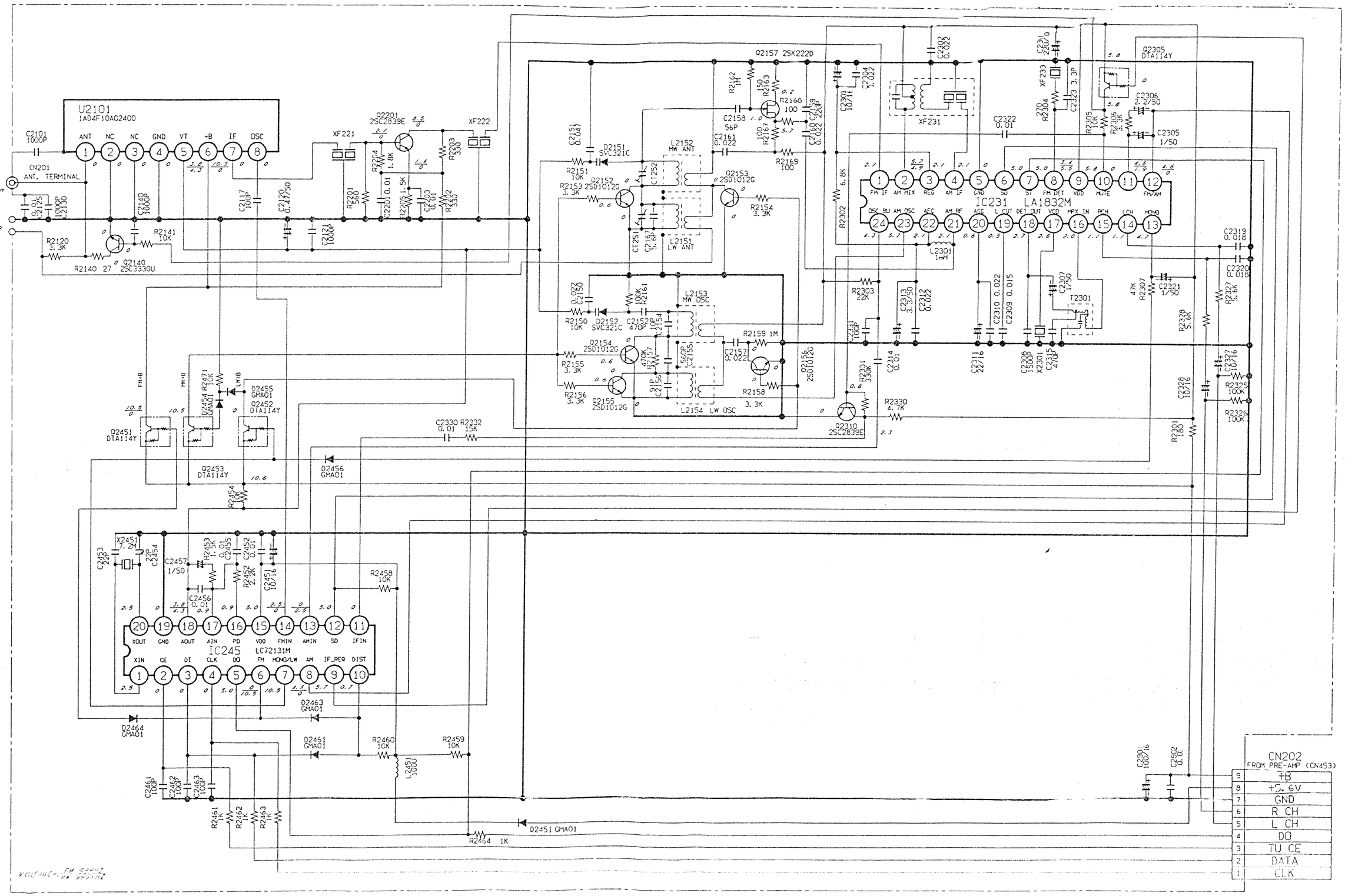
Ref. No.	Part No.	Description
352	614 254 0640	ASSY PCB,OPEN/CLOSE SWITCH
CN011	645 006 0922	PLUG,5P,SWITCH PWB CONNECTOR
S011	645 012 5874	SWITCH,PUSH,CHUCK END
S012	645 012 5850	SWITCH,SLIDE,TRAY OPEN/END

SLED / SPINDLE MOTOR P.W.BOARD ASSY

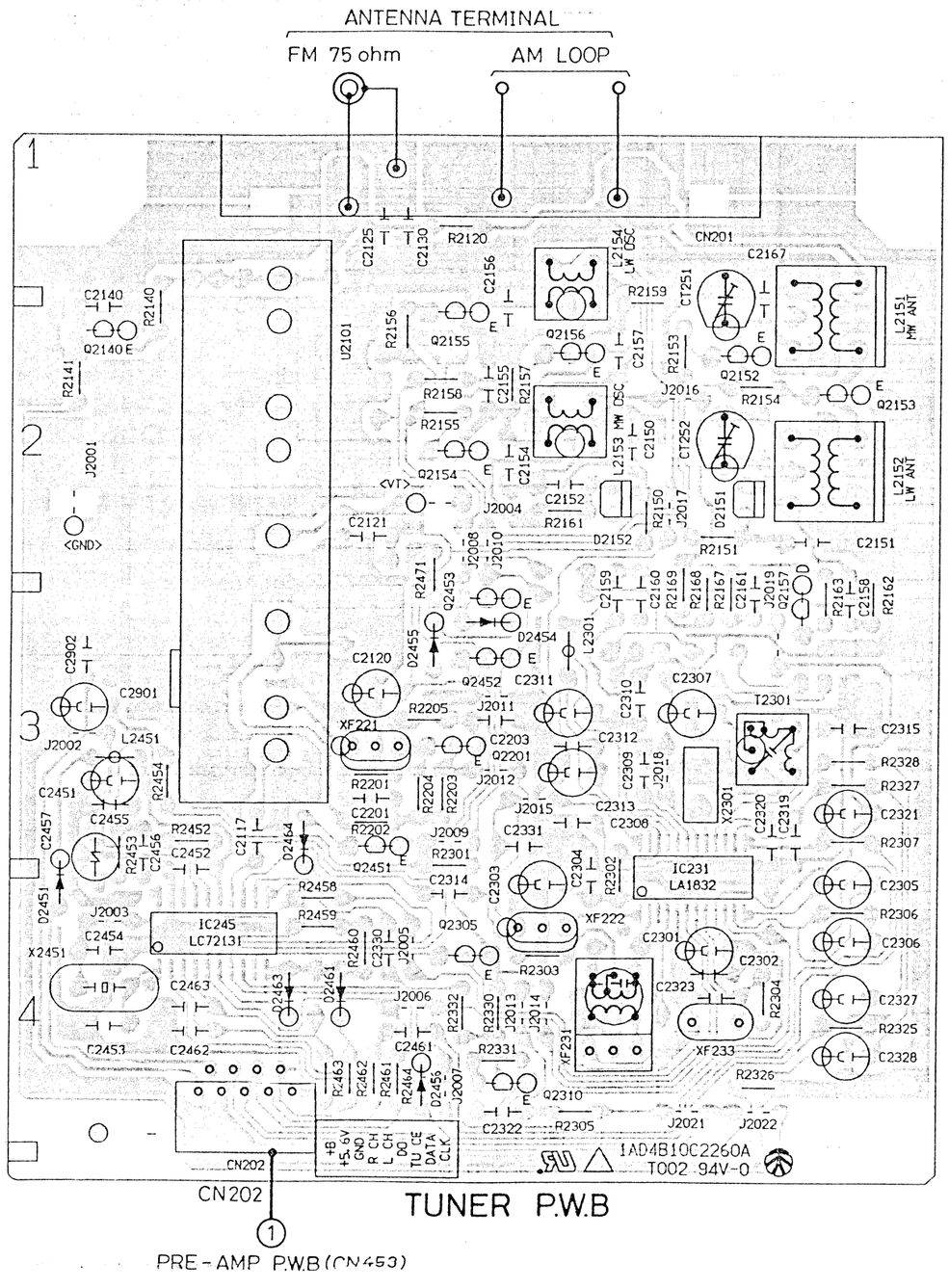
Ref. No.	Part No.	Description
451	614 254 0664	ASSY,PCB,SLED/SPINDLE MOTOR
CN001	645 006 0939	PLUG,6P,MOTOR PWB CONNECTOR
S001	645 012 5836	SWITCH,LEAF,LIMIT



SCHEMATIC DIAGRAM (TUNER)


U2101
1AD4F10AO2400
ANT NC NC GND VT +B IF OSC
CN201
ANT. TERMINAL
FM 75ohm
AM LOOP
IC231 LA1832M
FM IF AM MIX REG AM IF GND SD ST FM DET VDD MUTE FM/AM
OSC BU AM OSC AFC AM RF AGC L OUT DET OUT VCO MPX IN PCH LCH MONO
IC245 LC72131M
XOUT GND AOUT AIN PD VDD FMIN AMIN SD IFIN
XIN CE DI CLK DO FH MONO/LW AM IF_REQ DIST
CN202
FROM PRE-AMP (CN453)
9 +B
8 +5.6V
7 GND
6 R CH
5 L CH
4 DO
3 TU CE
2 DATA
1 CLK
VOLTAGE: FM 22VHZ
AM 5VSMHZ

WIRING DIAGRAM (TUNER)

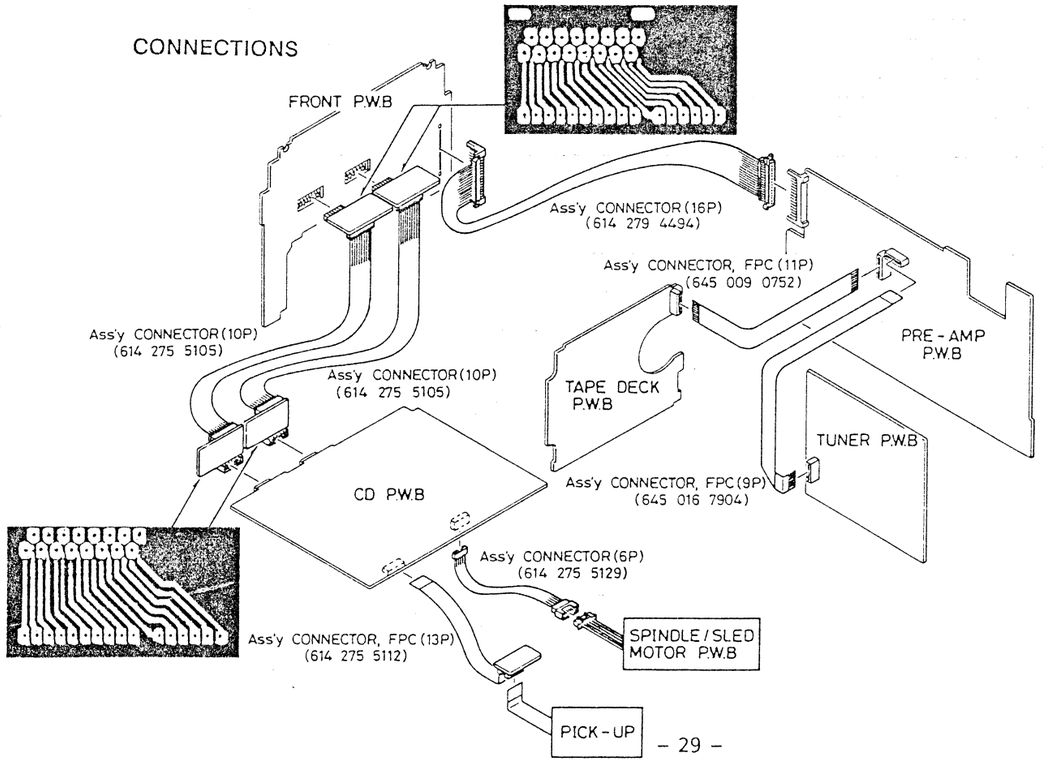


TEST CABLES

EXTENSION CABLES

No.	PART No.	DESCRIPTION
1	614 275 5105	ASSY, CONNECTOR, 10P
2	614 275 5112	ASSY, CONNECTOR, 13P, FPC
3	614 275 5129	ASSY, CONNECTOR, 6P
4	614 279 4494	ASSY, CONNECTOR, 16P
5	645 009 0752	FFC (FLEXIBLE FLAT CABLE), 11P 300mm
6	645 016 7904	FFC (FLEXIBLE FLAT CABLE), 9P 200mm

CONNECTIONS



SCHEMATIC DIAGRAM (POWER AMP.)

POWER AMP PWB

IC471 LA4705

IC472 NJM4558L

IC473 NJM4558L

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing.
Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance.
When replacing a component identified ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual.

TO PRE-AMP (CN452)

CN	15
R-CH	14
A-G	13
L-CH	12
V-CHECK	11
5.6V	10
MFB	9
MOTOR B	8
+12V	7
MOTOR-G	6
MUTE2	5
POWER	4
FL AC2	3
-30V	2
FL AC1	1

CN471

TO PHONES SOCKET (CN416) (FRONT SECTION)

SPEAKER TERMINAL PWB

CN478 + L-ch −

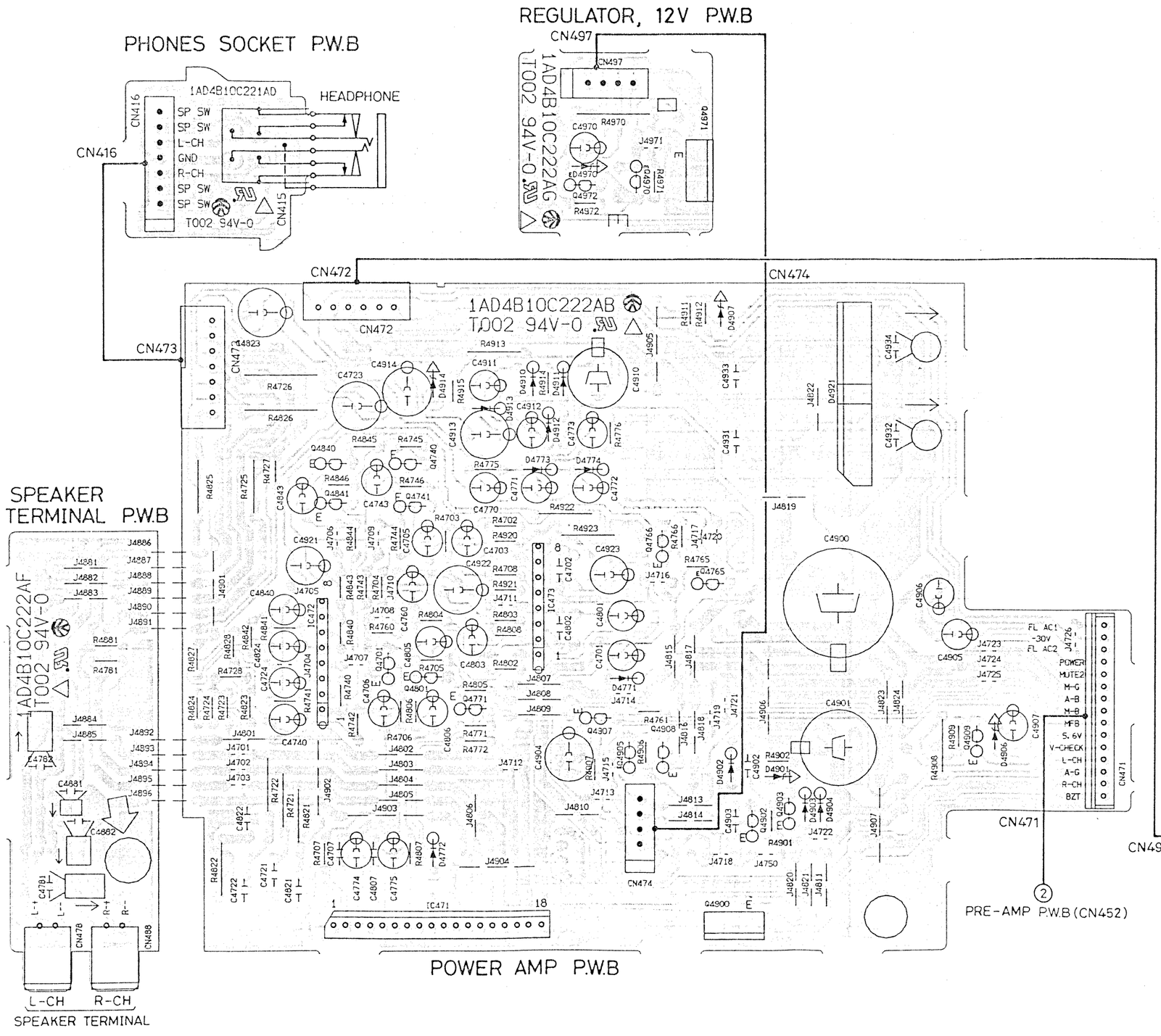
CN488 + R-ch −

REGULATOR, 12V, PWB

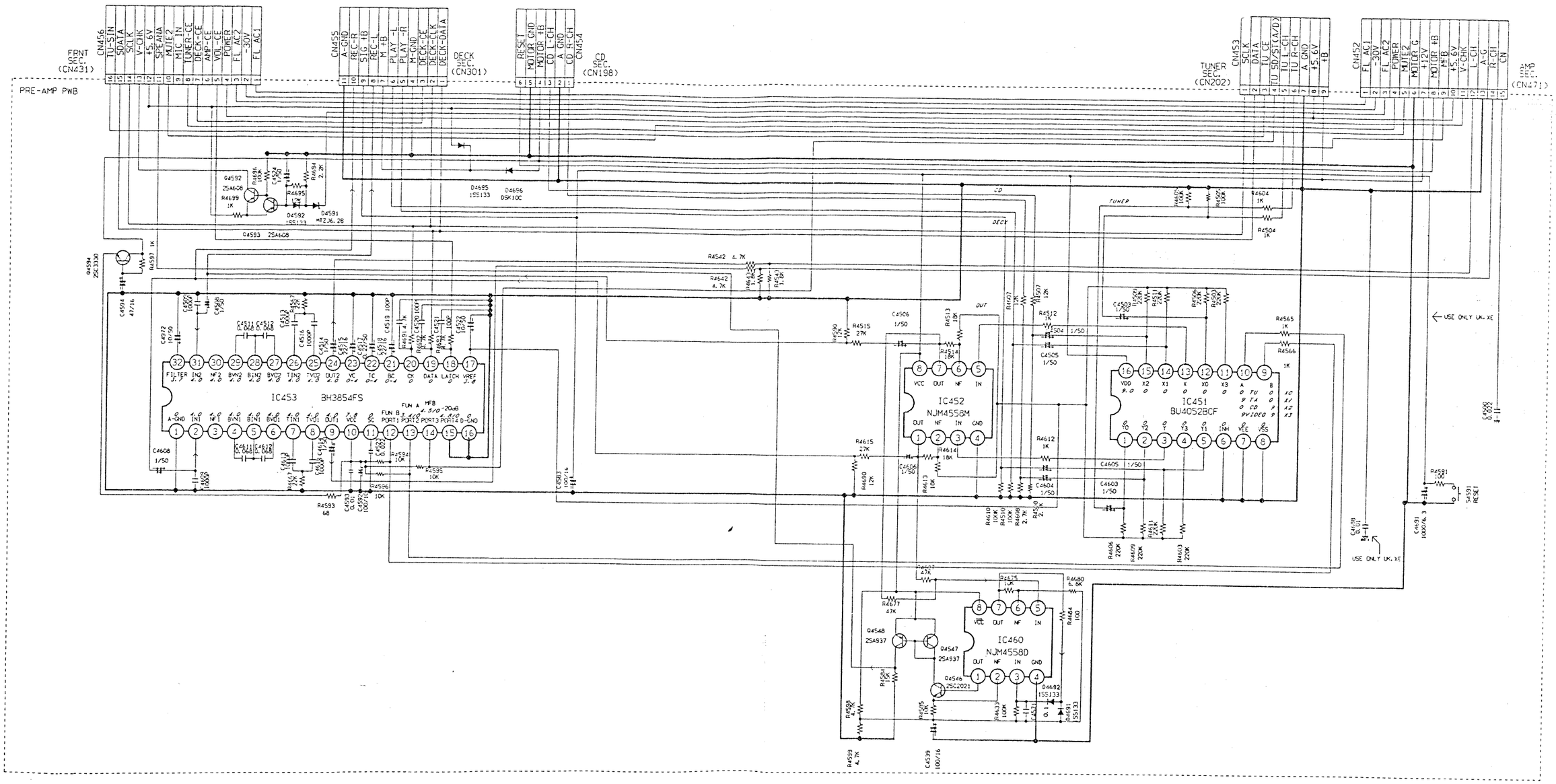
POWER TRANSFORMER, SECONDAY PWB

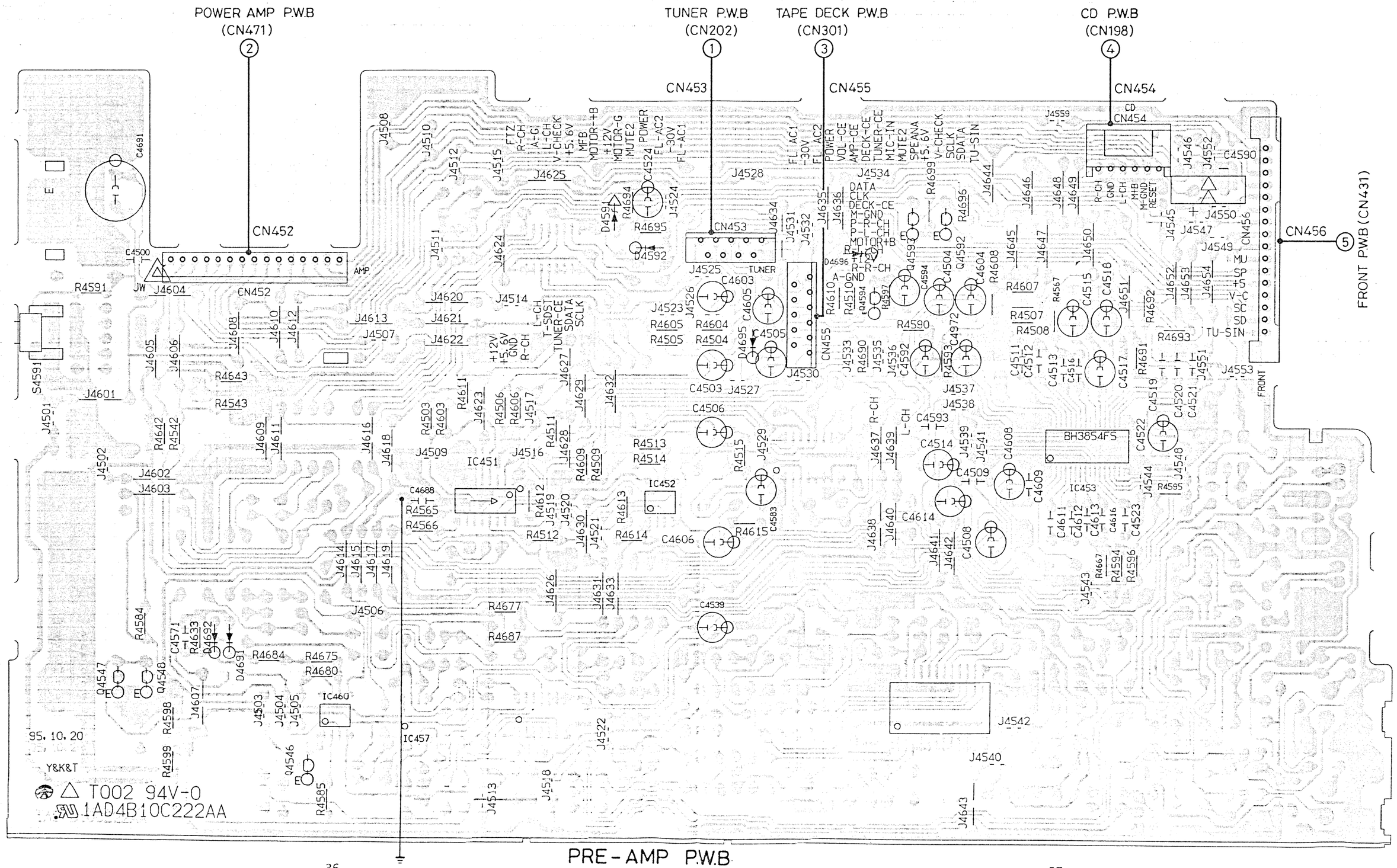
POWER TRANSFORMER, PRIMARY PWB

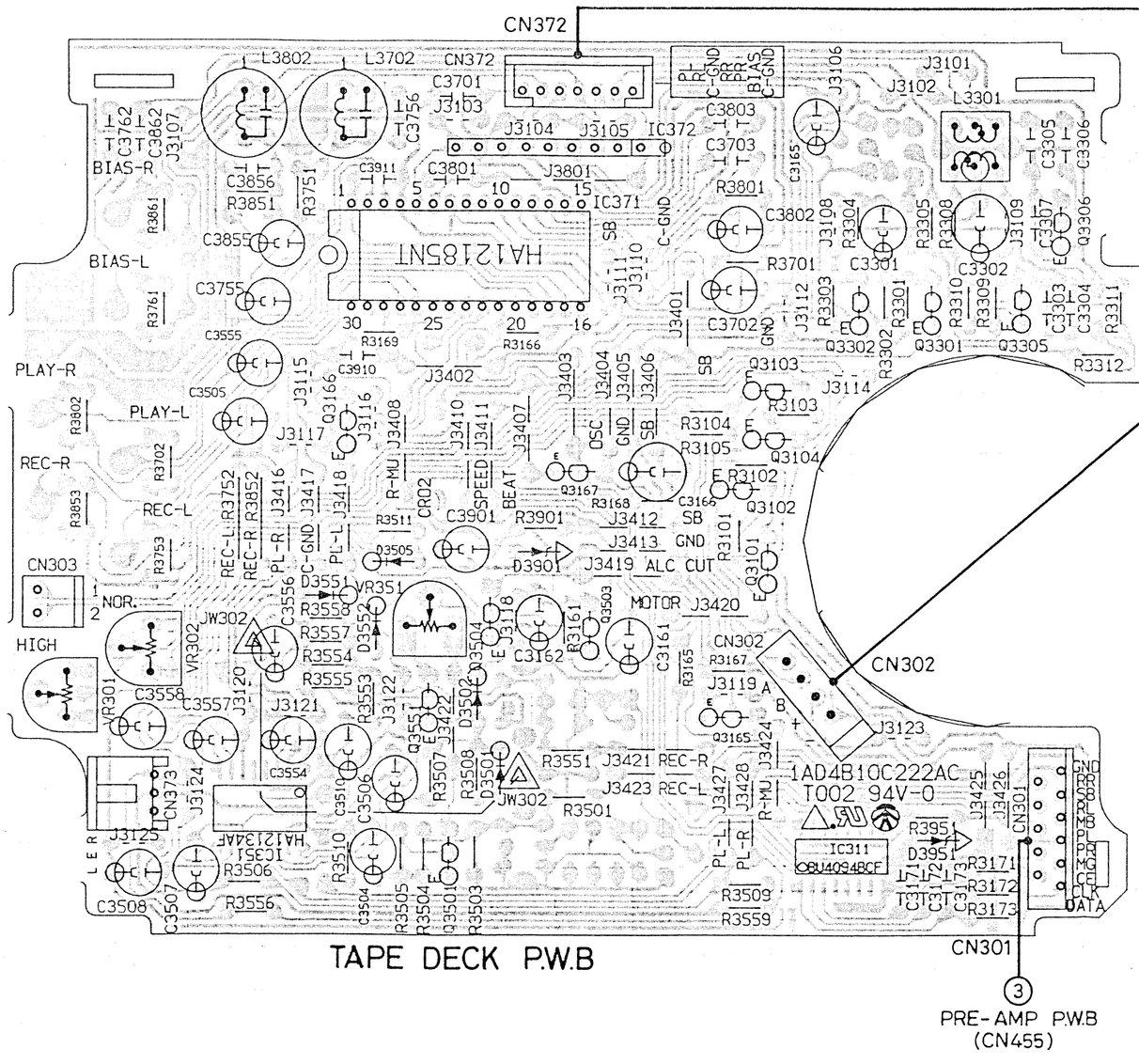
AC 230V 50Hz

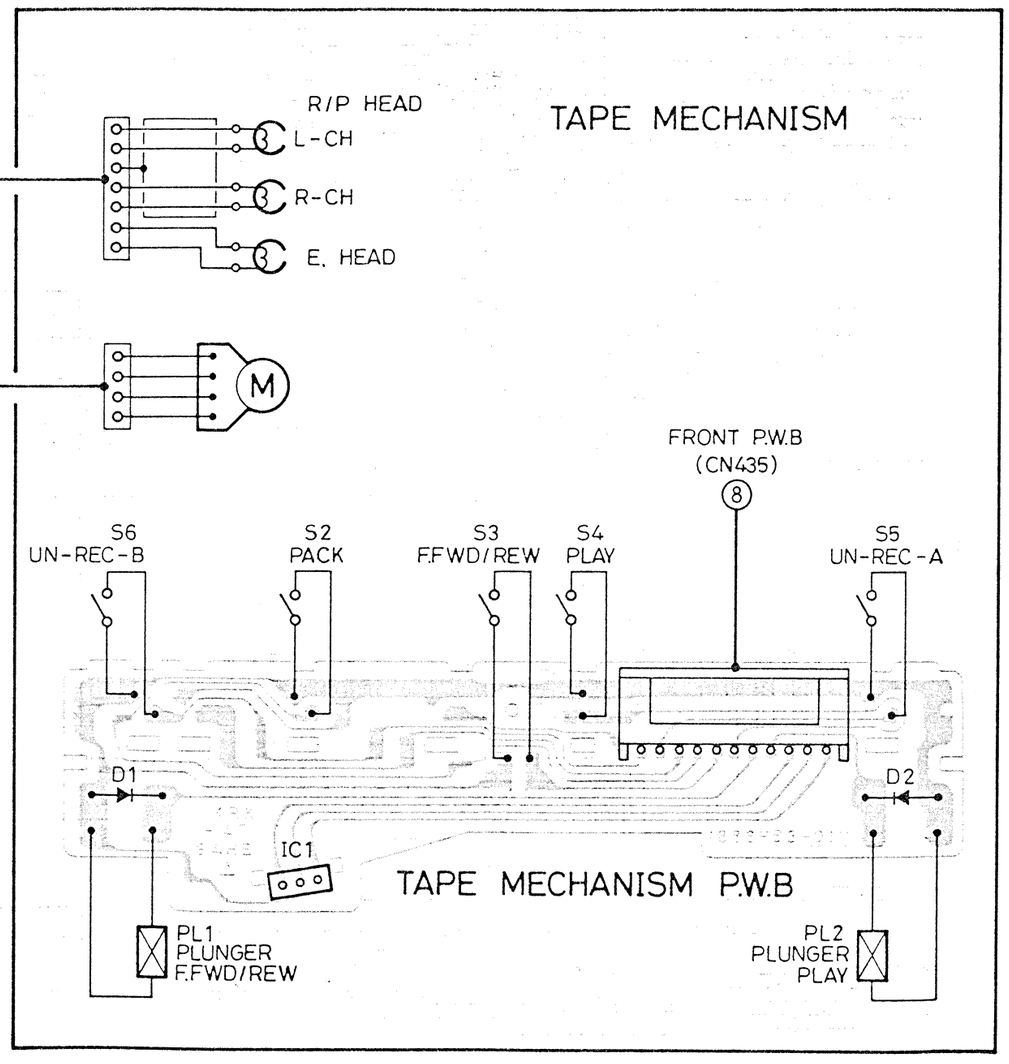

PHONES SOCKET P.W.B
1AD4B10C221AD
HEADPHONE
CN416
SP SW
SP SW
L-CH
GND
R-CH
SP SW
SP SW
T002 94V-0
CN415
REGULATOR, 12V P.W.B
CN497
1AD4B10C222AG
T002 94V-0
CN472
CN473
CN474
1AD4B10C222AB
T002 94V-0
SPEAKER TERMINAL P.W.B
1AD4B10C222AF
T002 94V-0
L-CH
R-CH
SPEAKER TERMINAL
POWER AMP P.W.B
AC 230V
50Hz
T630mA L 250V
FU499
BW
BL
WR499
WR498
F4999
POWER TRANSFORMER, PRIMALY P.W.B
1AD4B10C222AD
T002 94V-0
1AD4B10C222AE
T002 94V-0
P.T
T0001
CN471
CN496
PRE-AMP P.W.B (CN452)
POWER TRANSFORMER, SECONDARY P.W.B

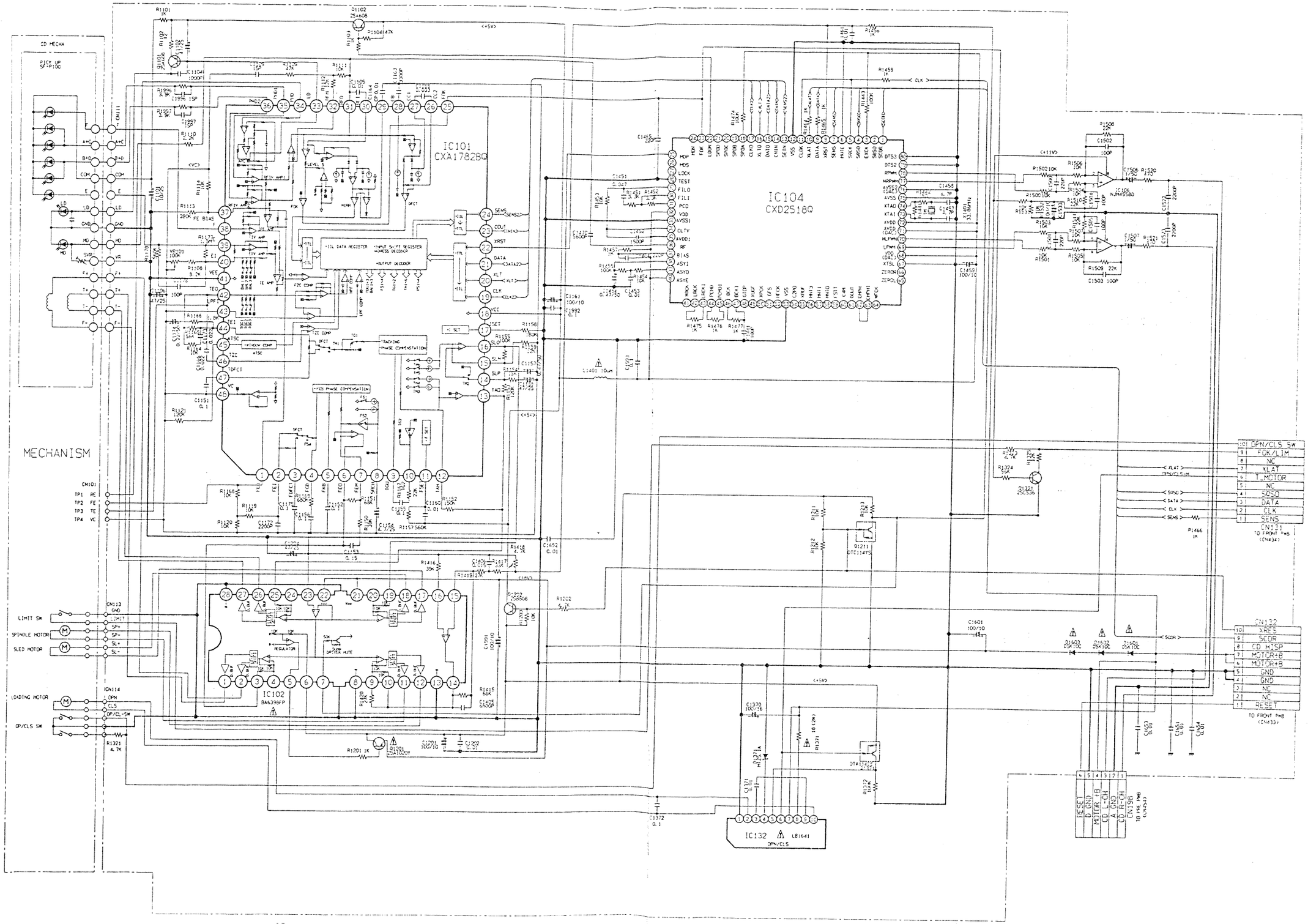
SCHEMATIC DIAGRAM (PRE-AMP.)




POWER AMP P.W.B
(CN471)
2
CN452
TUNER P.W.B
(CN202)
1
CN453
TAPE DECK P.W.B
(CN301)
3
CN455
CD P.W.B
(CN198)
4
CN454
CN456
5
FRONT P.W.B (CN431)
PRE-AMP P.W.B
IC451
IC452
IC453
IC457
IC460
BH3854FS
95. 10. 20
Y&K&T
△ T002 94V-0
1AD4B10C222AA


CN372
L3802
L3702
C3701
J3103
J3104
J3105
IC372
C3803
C3703
J3106
J3101
J3102
L3301
C3762
C3862
J3107
C3756
BIAS-R
C3856
R3851
R3751
C3911
C3801
J3801
IC371
R3801
C3305
C3306
Q3306
R3861
C3855
BIAS-L
HA12185NT
C3802
J3108
R3304
R3305
R3308
J3109
C3307
C3755
R3761
C3555
C3702
R3701
C3301
C3302
R3310
R3309
C3303
C3304
R3311
30
25
20
16
R3169
R3166
PLAY-R
C3910
J3115
J3402
J3401
J3112
R3303
R3301
R3302
Q3302
Q3301
Q3305
R3312
C3505
Q3166
J3116
Q3103
J3114
R3103
PLAY-L
R3802
J3117
J3408
J3410
J3411
J3403
J3404
J3405
J3406
SB
R3104
R3105
Q3104
REC-R
R3702
R-MU
CRO2
SPEED
BEAT
OSC
GND
Q3167
R3168
C3166
R3102
REC-L
R3853
C3901
R3901
J3412
SB
Q3102
R3511
J3413
GND
R3101
Q3101
CN303
D3551
D3901
J3419
ALC CUT
R3753
REC-L
REC-R
PL-R
C-GND
PL-L
R3752
R3852
J3416
J3417
J3418
R3550
VR351
MOTOR
J3420
NOR.
2
1
JW302
C3556
R3557
R3554
R3555
D3552
J3118
R3161
Q3503
C3162
C3161
R3165
CN302
R3167
HIGH
VR302
VR301
C3558
C3557
J3120
J3121
R3553
J3122
J3119
A
B
Q3165
J3123
J3422
Q3551
J3424
R3507
R3508
D3501
D3502
D3504
R3551
J3421
REC-R
J3423
REC-L
J3427
J3428
R-MU
1AD4B10C222AC
T002 94V-0
C3554
C3510
C3506
JW302
R3501
CN373
J3124
J3125
L
E
R
HA12134AF
IC351
R3506
C3508
C3507
R3556
R3510
C3504
R3505
R3504
Q3501
R3503
PL-L
PL-R
IC311
OBU4094BCF
R395
D395
J3425
J3426
CN301
R3171
R3172
R3173
C3171
C3172
C3173
CLK
DATA
CN301
3
PRE-AMP P.W.B
(CN455)
TAPE DECK P.W.B


TAPE MECHANISM
R/P HEAD
L-CH
R-CH
E. HEAD
M
FRONT P.W.B
(CN435)
8
S6
UN-REC-B
S2
PACK
S3
F.FWD/REW
S4
PLAY
S5
UN-REC-A
D1
D2
IC1
TAPE MECHANISM P.W.B
PL1
PLUNGER
F.FWD/REW
PL2
PLUNGER
PLAY


CD MECHA
PICK UP SP-10C
MECHANISM
IC101
CXA1782BQ
IC102
BA6398FP
IC104
CXD2518Q
IC132
LB1641
OPN/CLS
IC106
NJM4580
LIMIT SW
SPINDLE MOTOR
SLED MOTOR
LOADING MOTOR
OP/CLS SW
CN101
CN113
CN114
CN132
CN133
CN134
CN135
TO FRONT PWB (CN434)
TO FRONT PWB (CN433)
TO PWR (PWB) (CN454)
OPN/CLS SW
FOK/LIM
NC
XLAT
T_MOTOR
SQSO
DATA
CLK
SENS
XRES
SCOR
CD_H15P
MOTOR+B
GND
RESET
D_GND
MOTOR_+B
CD_L-CH
A_GND
CD_R-CH
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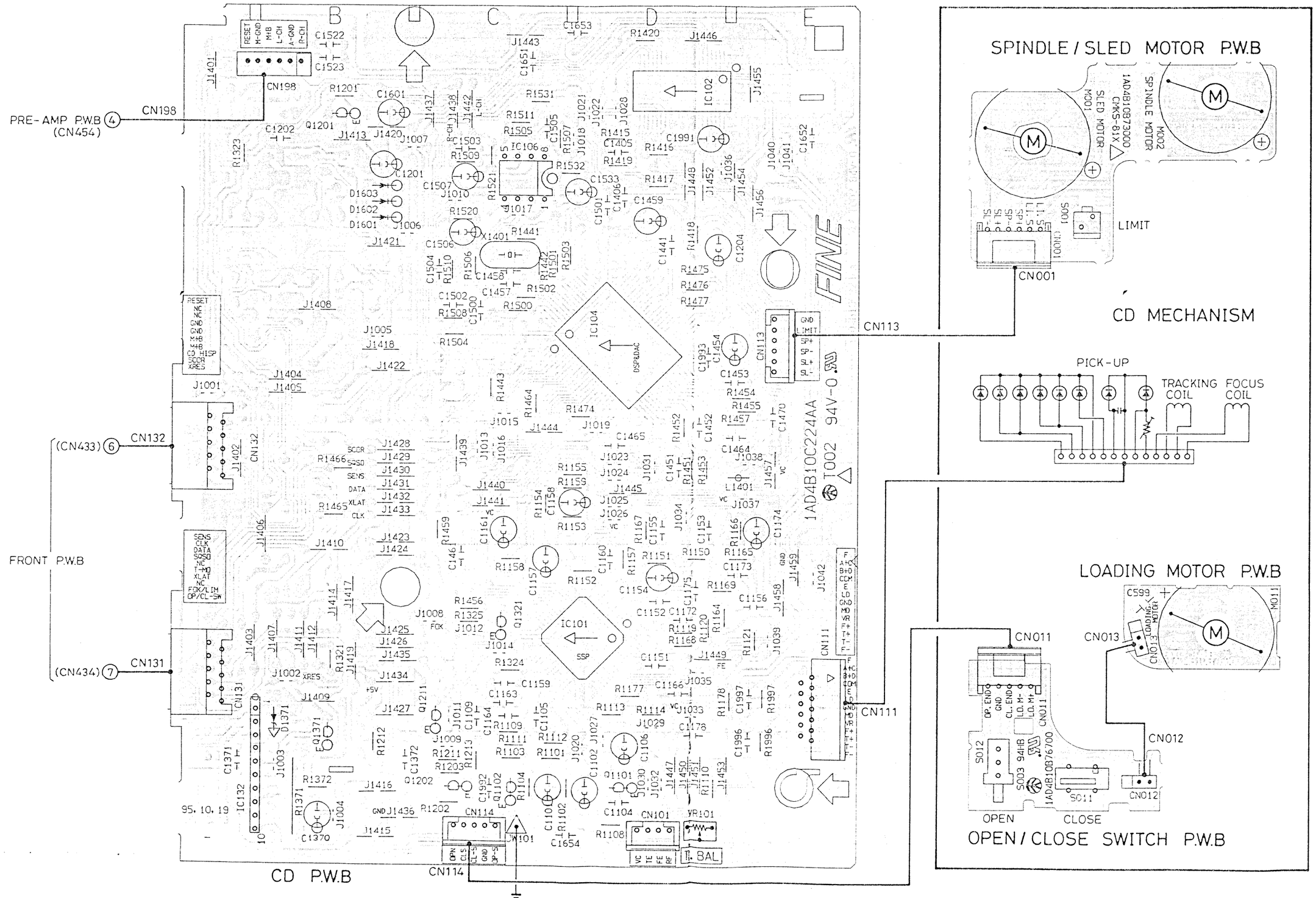
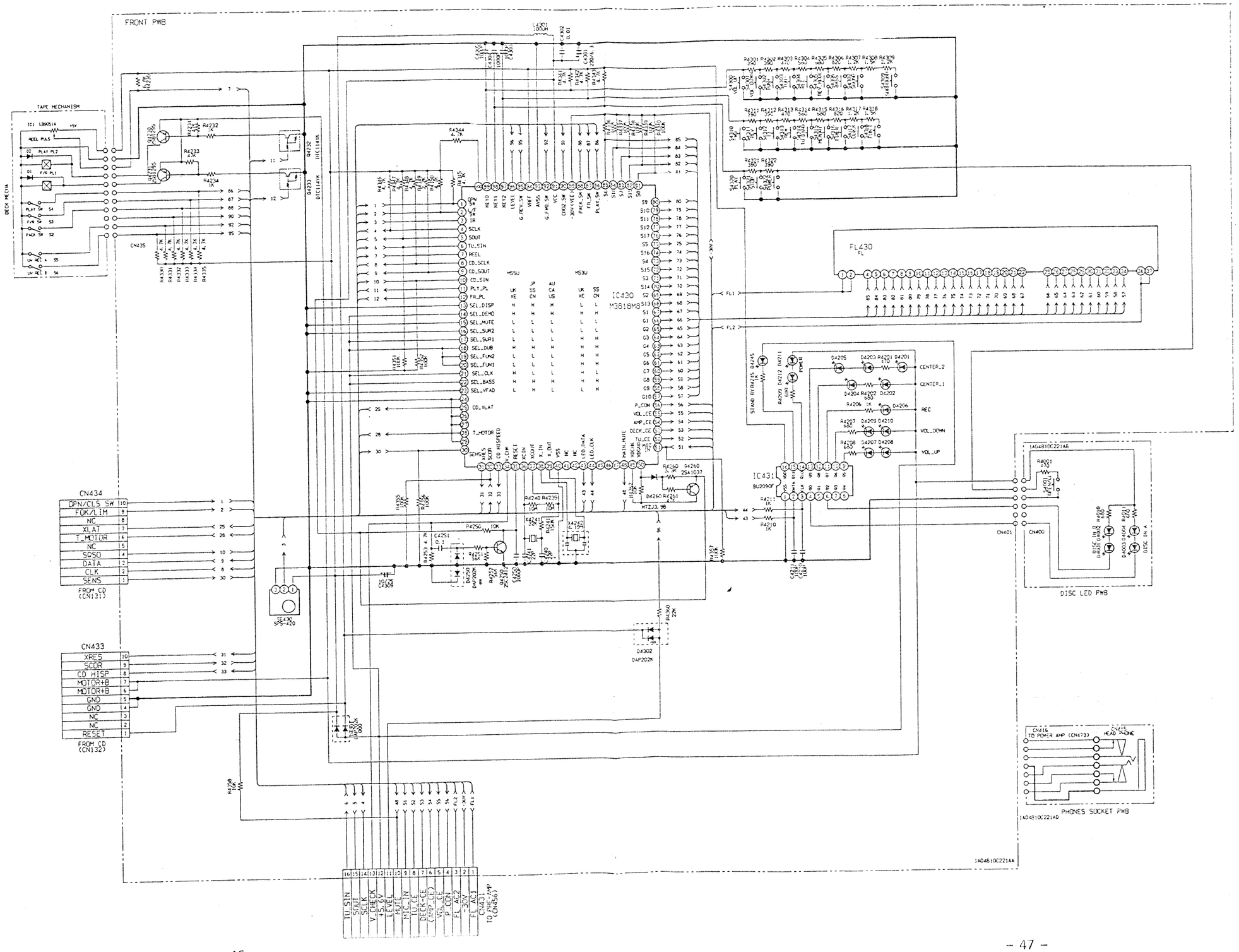
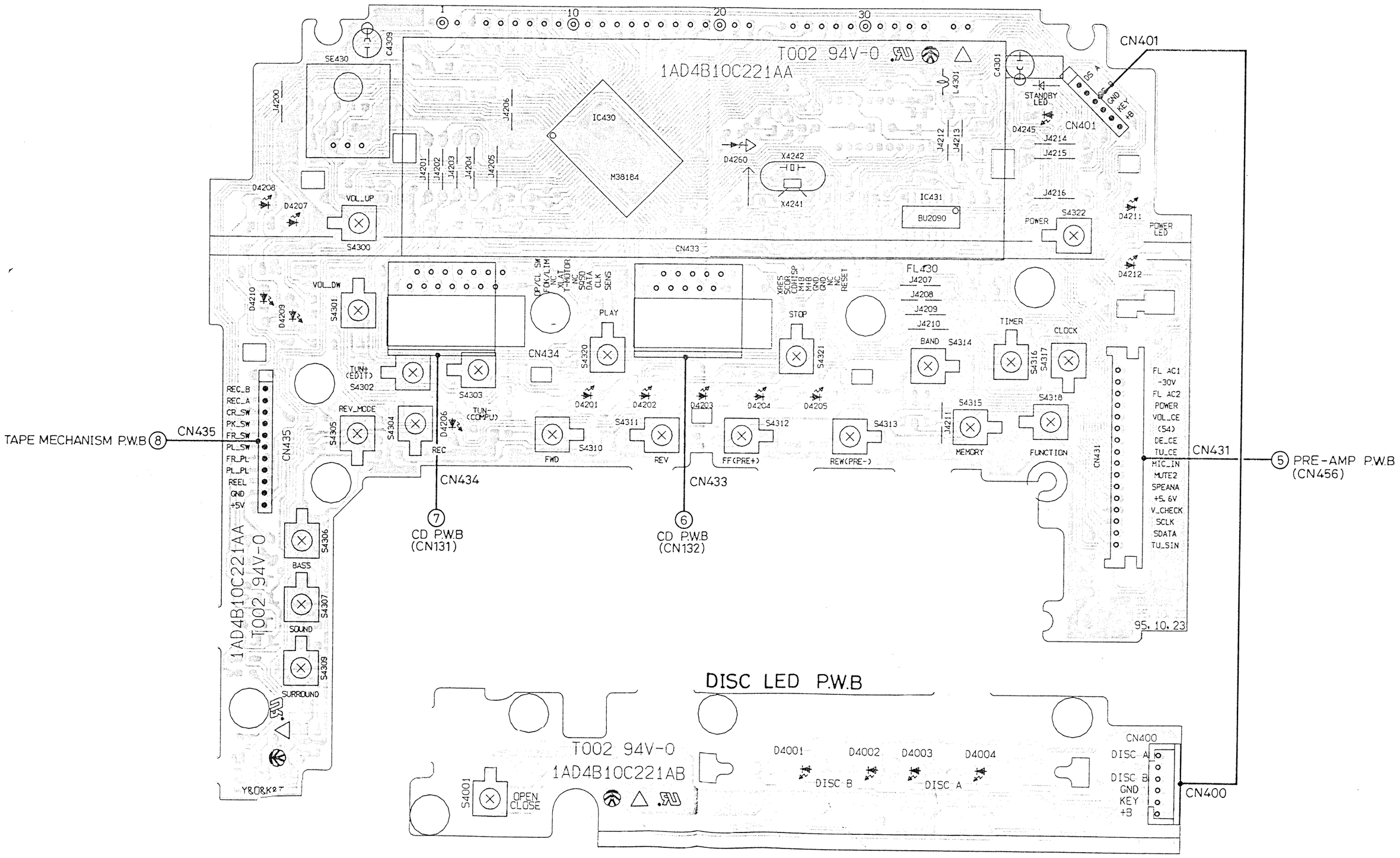
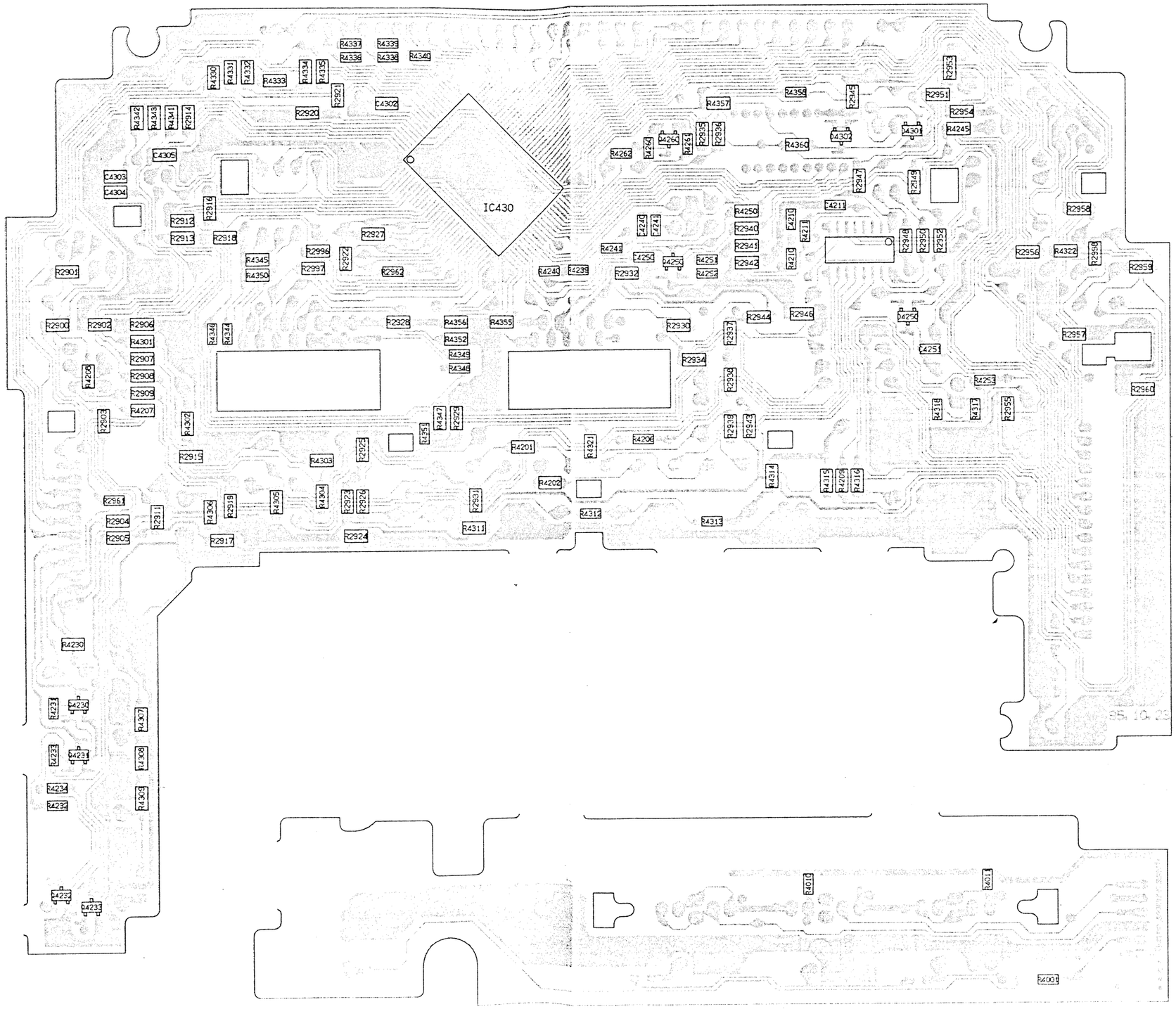

PRE-AMP P.W.B (CN454)
CN198
CN132
CN131
FRONT P.W.B
CD P.W.B
CN114
CN113
CN111
SPINDLE / SLED MOTOR P.W.B
SLED MOTOR M001
SPINDLE MOTOR M002
1AD4B10873000 CMKS-81X
LIMIT
CN001
CD MECHANISM
PICK-UP
TRACKING COIL
FOCUS COIL
LOADING MOTOR P.W.B
CN011
CN013
CN012
OPEN
CLOSE
OPEN / CLOSE SWITCH P.W.B
1AD4B10C224AA T002 94V-0
95. 10. 19


FRONT PWB
TAPE MECHANISM
DECK MECHA
IC430
M3818M8
IC431
SU2090F
FL430
CN434
CN433
CN435
CN401
CN400
CN416
FROM CD (CN131)
FROM CD (CN132)
TO PRE-AMP (CN456)
TO POWER AMP (CN4733)
HEAD PHONE
DISC LED PWB
PHONES SOCKET PWB
1AD4B10C221AA
1AD4B10C221AB
1AD4B10C221AD

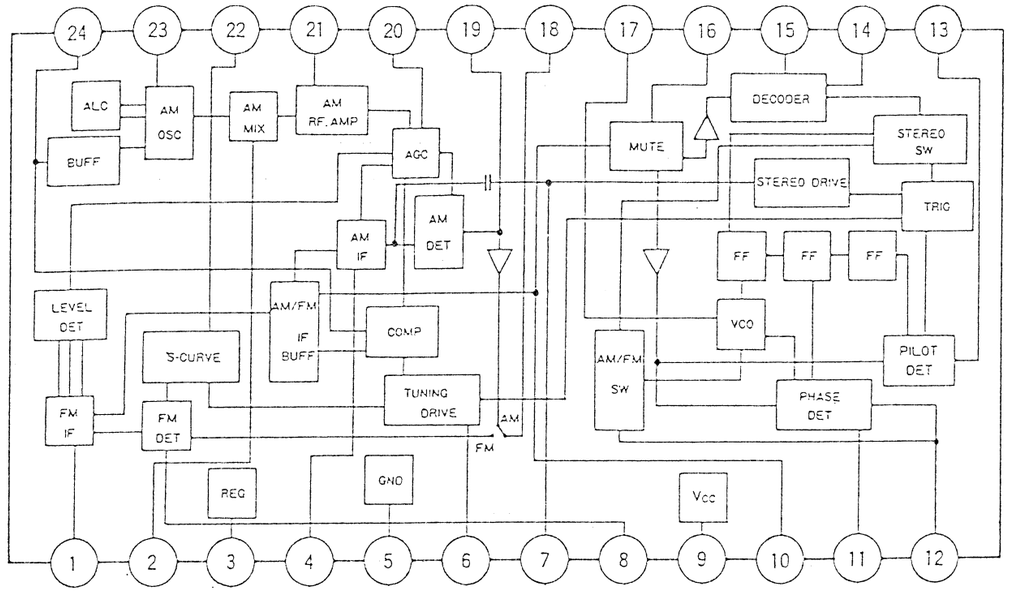
FRONT P.W.B


T002 94V-0
1AD4B10C221AA
IC430
M38184
IC431
BU2090
X4242
X4241
D4260
CN401
DS A
GND
KEY
+B
STANDBY LED
D4245
J4214
J4215
J4216
POWER
S4322
D4211
POWER LED
D4212
CN433
FL430
J4207
J4208
J4209
J4210
BAND S4314
TIMER
S4316
S4317
CLOCK
S4318
S4315
MEMORY
FUNCTION
J4211
CN431
FL AC1 -30V
FL AC2
POWER
VOL_CE
(S4)
DE_CE
TU_CE
MIC_IN
MUTE2
SPEANA
+5.6V
V_CHECK
SCLK
SDATA
TU_SIN
95.10.23
CN431
⑤ PRE-AMP P.W.B (CN456)
D4208
D4207
VOL_UP
S4300
D4210
D4209
VOL_DW
S4301
TUNE (EDIT)
S4302
S4303
CN434
PLAY
S4320
STOP
S4321
D4201
D4202
D4203
D4204
D4205
TUN- (COMPU)
S4311
REV
S4310
FWD
S4312
FF(PRE+)
S4313
REW(PRE-)
REV_MODE
S4305
S4304
D4206
REC
CN435
REC_B
REC_A
CR_SW
PK_SW
FR_SW
PL_SW
FR_PL
PL_PL
REEL
GND
+5V
TAPE MECHANISM P.W.B ⑧ CN435
⑦ CD P.W.B (CN131)
CN434
⑥ CD P.W.B (CN132)
CN433
BASS
S4306
SOUND
S4307
SURROUND
S4309
1AD4B10C221AA
T002 94V-0
Y&O&K
DISC LED P.W.B
T002 94V-0
1AD4B10C221AB
S4001
OPEN CLOSE
D4001
D4002
D4003
D4004
DISC B
DISC A
CN400
DISC A
DISC B
GND
KEY
+B
CN400

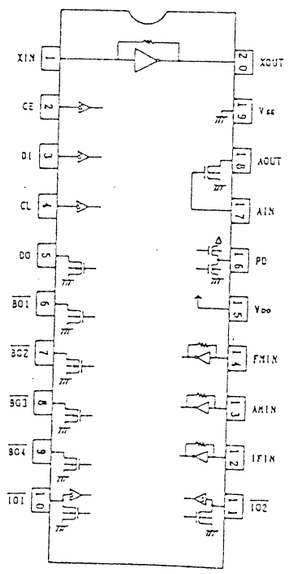

IC430
95.10.23

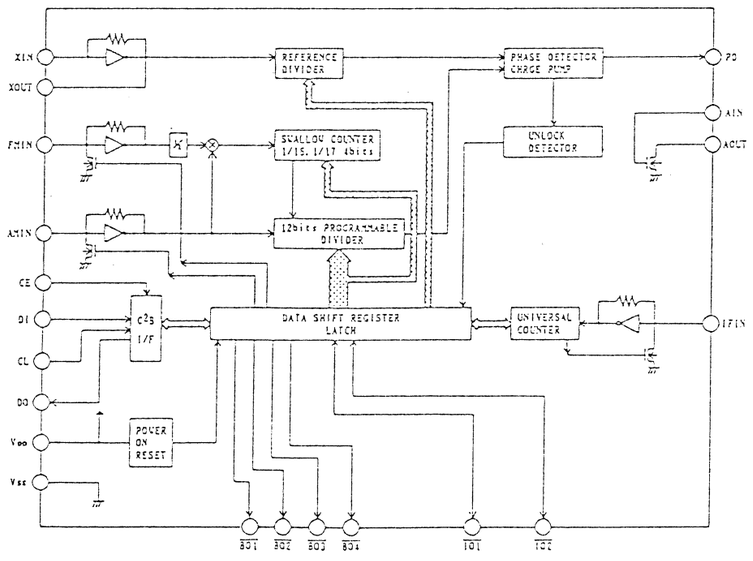
IC BLOCK DIAGRAM & DESCRIPTION

IC231 LA1832 (AM/FM IF & FM MPX)



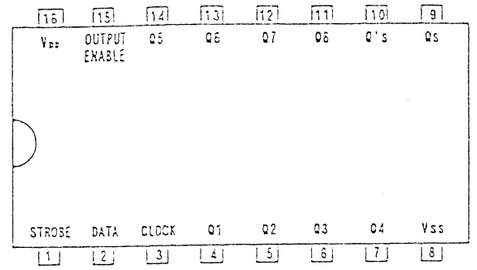
IC245 LC72131M (PLL SYNTHSIZER)

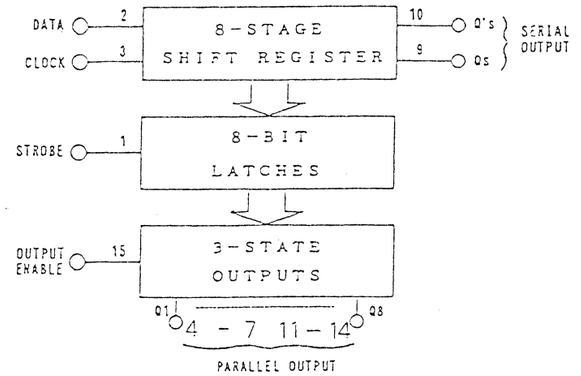




IC BLOCK DIAGRAM & DESCRIPTION

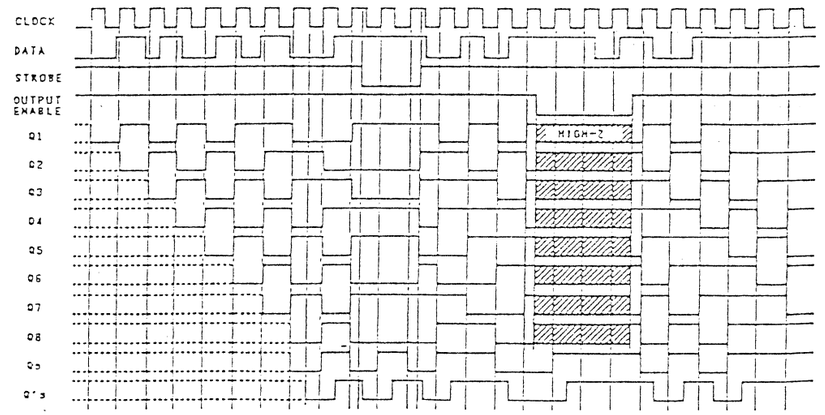
IC311 BU4094B (8-STAGE SHIFT/STORE REGISTER)





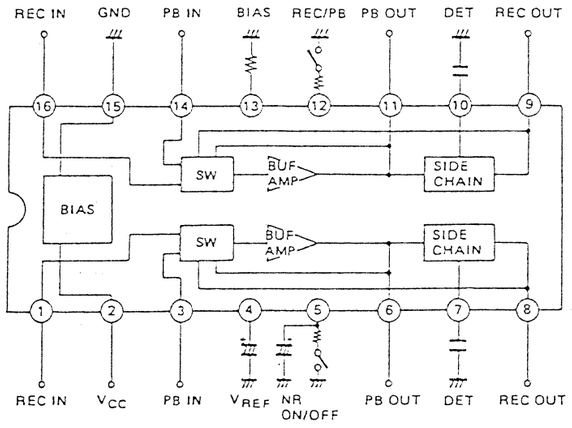
CLOCK	OUTPUT ENABLE	STROBE	DATA	PARALLEL OUTPUTS		SERIAL OUTPUTS	
				Q1	Qn	Qs	Q's
⊓	L	×	×	Z	Z	Q7	No Chg.
⊔	L	×	×	Z	Z	No Chg.	Qs
⊓	H	L	×	No Chg.	No Chg.	Q7	No Chg.
⊓	H	H	L	L	Qn−1	Q7	No Chg.
⊓	H	H	H	H	Qn−1	Q7	No Chg.
⊔	H	×	×	No Chg.	No Chg.	No Chg.	Qs

Z=High Impedance
×=Don't Care

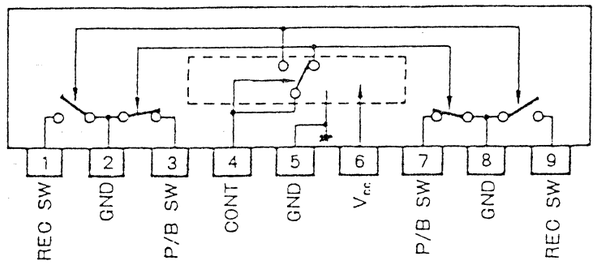


IC BLOCK DIAGRAM & DESCRIPTION

IC351 HA12134A (DOLBY B-TYPE NOISE REDUCTION)



IC372 BA3126N (HEAD CHANGEOVER SWITCHES)

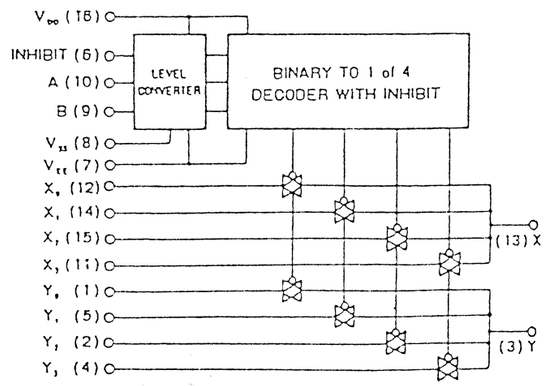


IC451 BU4052BF (FUNCTION)

Truth Table

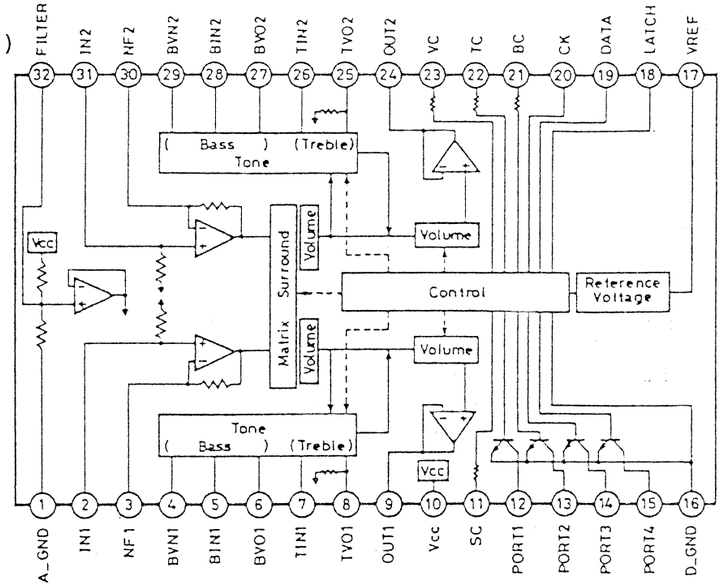
INHIBIT	A	B	ON SWITCH
L	L	L	X0 Y0
L	H	L	X1 Y1
L	L	H	X2 Y2
L	H	H	X3 Y3
H	X	X	NONE

X : Don't Care

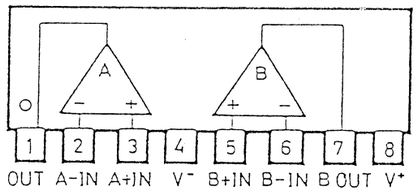


IC BLOCK DIAGRAM & DESCRIPTION

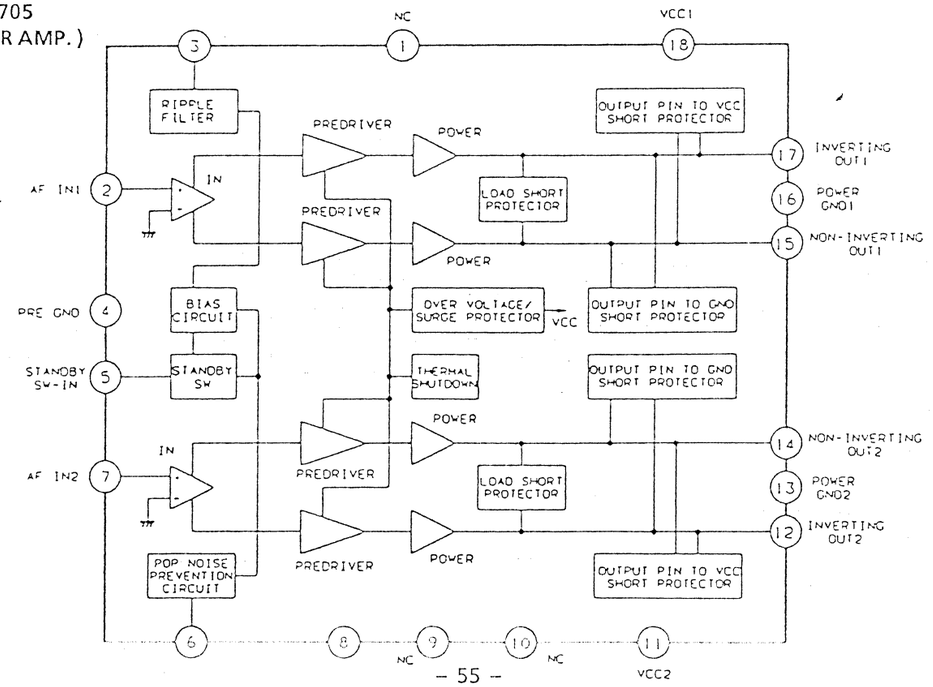
IC453 BH3854FS
(AUDIO SOUND CONTROL)



IC472, NJM4558L (OP. AMP.)
IC473



IC471 LA4705
(AF POWER AMP.)

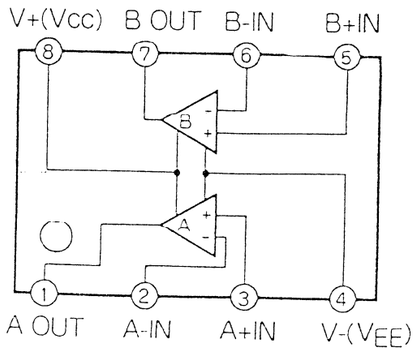


IC101 CXA1782BQ (SERVO SIGNAL PROCESSOR)

No.	Name	I / O	Description
1	FEO	O	Focus error amplifier output.
2	FEI	I	Focus error input.
3	FDFCT	I	Capacitor connection pin for detect time constant.
4	FGD	I	Ground this pin through a capacitor when decreasing the focus servo high-frequency
5	FLB	I	External time constant setting pin for increasing the focus servo low frequency.
6	FEO	O	Focus drive output.
7	FEM	I	Focus amplifier negative input.
8	SRCH	I	External time constant setting pin for generating focus servo waveform.
9 10	TGU TG2	I I	External time constant setting pin for switching tracking high-frequency gain.
11	FSET	I	High cut off frequency setting pin for focus and tracking phase compensation amplifier.
12	TAM	I	Tracking amplifier negative input.
13	TAO	O	Tracking drive output.
14	SLP	I	Sled amplifier non-inverted input.
15	SLM	I	Sled amplifier negative input.
16	SLO	O	Sled drive output
17	ISET	I	Setting pin for Focus search, Tracking jump, and Sled kick current.
18	V_{CC}	-	+5.0V
19	CLK	I	Serial data transfer clock input from CPU.
20	XLT	I	Latch input from CPU.
21	DATA	I	Serial data input from CPU.
22	XRST	I	Reset input; resets at Low.
23	C.OUT	O	Track number count signal output.
24	SENS	O	Outputs FZC, DFCT, TZC, gain, balance, and others according to the command from CPU.

No.	Name	I / O	Description
25	FOK	O	Focus OK comparator output.
26	CC2	O	Input pin for the DEFECT bottom hold output capacitance-coupled.
27	CC1	I	DEFECT bottom hold output.
28	CB	I	Connection pin for DEFECT bottom hold capacitor.
29	CP	I	Connection pin for MIRR hold capacitor. MIRR comparator non-inversed input.
30	RFI	I	Input pin for the RF summing amplifier output capacitance-coupled.
31	RFO	O	RF summing amplifier output. Eye pattern check point.
32	RFM	I	RF summing amplifier inverted input. The RF amplifier gain is determined by the resistance connected between this pin and RFO pin.
33	LD	O	APC (Auto Power Control) amplifier output.
34	PHD	I	APC (Auto Power Control) amplifier input.
35 36	PHD1 PHD2	I I	RF I-V amplifier inverted input.
37	FEBIAS	I	Bias adjustment of focus error amplifier.
38 39	F E	I I	F I-V and E I-V amplifier inverted input.
40	EI	-	I-V amplifier E gain adjustment.
41	V_{EE}	-	GND
42	TEO	O	Tracking error amplifier output.
43	LPFI	I	Comparator input for balance adjustment.
44	TEI	I	Tracking error input.
45	ATSC	I	Window comparator input for ATSC detection.
46	TZC	I	Tracking zero-cross comparator input.
48	VC	O	$(V_{CC} + V_{EE}) / 2$ DC voltage output.

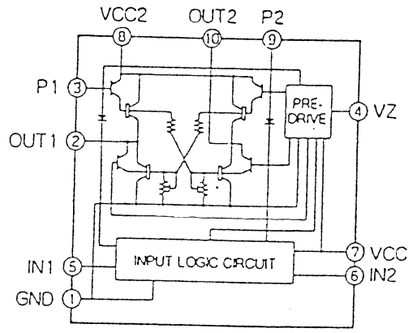
IC106 NJM4558D or LA6458D (OP. AMP.)



IC102 BA6398FP (POWER DRIVER)

No.	NAME	DESCRIPTION
1	CH1-OUT A	DRIVER CH1 (-)
2	CH1-OUT B	DRIVER CH1 (+)
3	CH1-IN A	DRIVER CH1
4	CH1-IN B	NOT USED
5	Tr-B	REGULATOR
6	Vreg OUT	Vreg
7	MUTE	MUTE CONTROL
8	GND	GND
9	CH2-IN B	DRIVER CH2 GAIN
10	CH2-IN A	DRIVER CH2
11	CH2-OUT B	DRIVER CH2 (+)
12	CH2-OUT A	DRIVER CH2 (-)
13	GND	GND
14	OP OUT	OP. AMP
15	OP IN (-)	OP. AMP
16	OP IN (+)	OP. AMP
17	CH3-OUT A	DRIVER CH3 (-)
18	CH3-OUT B	DRIVER CH3 (+)
19	CH3-IN A	DRIVER CH3
20	CH3-IN B	NOT USED
21	VCC	VCC
22	VCC	VCC
23	BIAS IN	BIAS
24	CH4-IN B	NOT USED
25	CH4-IN A	DRIVER CH4
26	CH4-OUT B	DRIVER CH4 (+)
27	CH4-OUT A	DRIVER CH4 (-)
28	GND	GND

IC132 LB1641 (RECORD/PLAY SWITCHING)



Input		Output		Action
IN1	IN2	OUT1	OUT2	
0	0	0	0	Brake
1	0	1	0	Normal(Reverse)Rotary
0	1	0	1	Reverse(Normal)Rotary
1	1	0	0	Brake

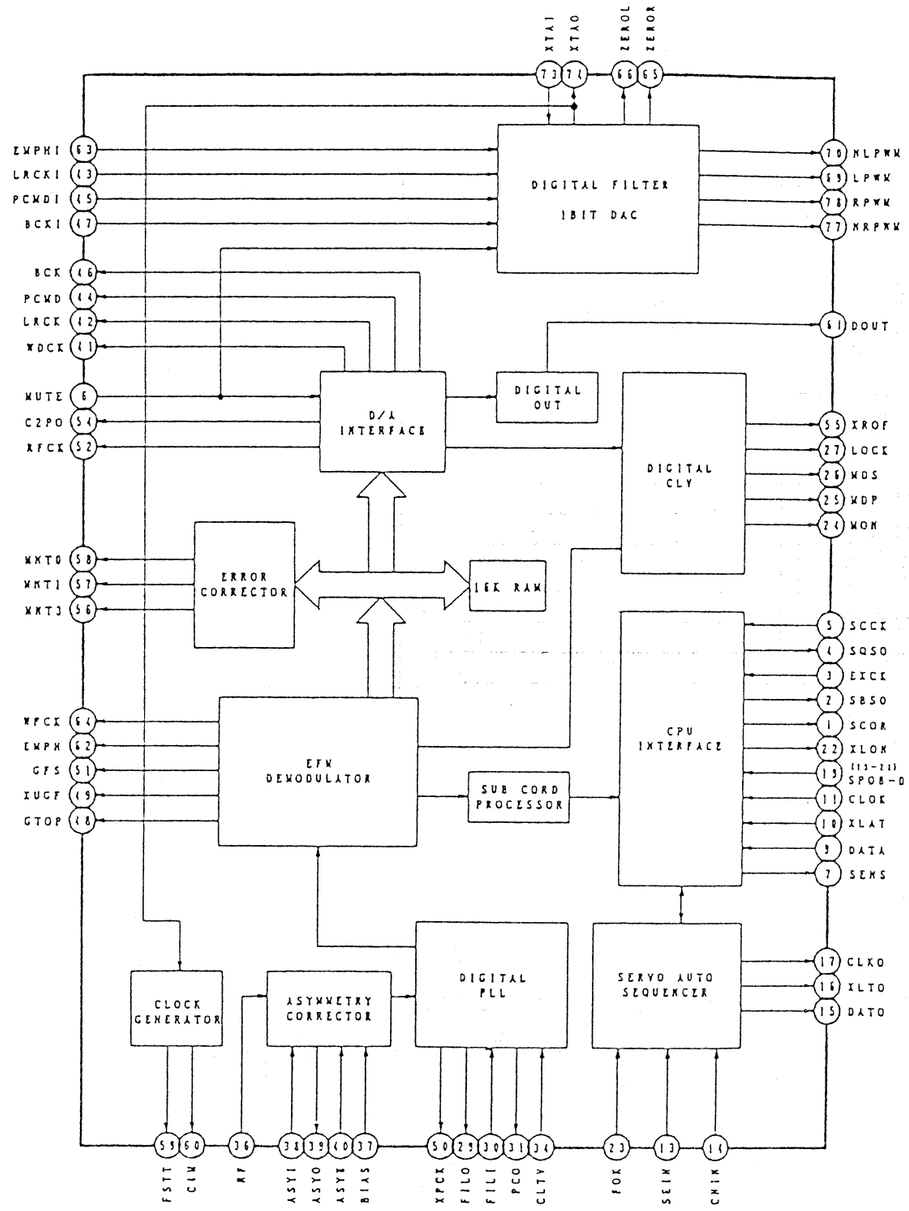
IC BLOCK DIAGRAM & DESCRIPTION

IC104 CXD2518Q (DIGITAL SIGNAL PROCESSOR)

No.	Name	I / O	Description
1	SCOR	O	Turns "H" when sync S0 or S1 is detected.
2	SBSO	O	Serial output of sub-code P ~ W.
3	EXCK	I	Clock input for reading SBSO.
4	SQSO	O	Serial output of SUBQ & SOBIT.
5	SQCK	I	Clock input for reading SQSO.
6	MUTE	I	"H" at muting, "L" at muting cancel.
7	SENS	O	SENS signal output to CPU.
8	XRST	I	System reset, "L" at resetting.
9	DATA	I	Inputs serial data from CPU.
10	XLAT	I	Latches input from CPU. Serial data latches at falling edge.
11	CLOK	I	Inputs serial data transfer clock from CPU.
12	V_{SS}	-	GND.
13	SEIN	I	Inputs SENS signal from SSP.
14	CNIN	I	Inputs track jump count signal
15	DATO	O	Outputs serial data to SSP
16	XLTO	O	Outputs latches to SSP. Serial data latches at falling edge.
17	CLKO	O	Outputs serial data transfer clock to SSP.
18	TEST2	I	Pin for TEST. Normal used state: V_{DD}.
19	SPOB	I	Not used
20	SPOC	I	Not used
21	SPOD	I	Not used
22	XLON	O	Interface for extension of M. processor(output)
23	FOK	I	Focus OK signal input pin. Used servo auto sequencer with SENS output.
24	MON	O	ON/OFF control signal for spindle motor.
25	MDP	O	Servo control signal for spindle motor.
26	MDS	O	Not used
27	LOCK	O	Not used
28	TEST	I	GND.
29	FILO	O	Output of filter for master PLL.(Slave = Digital PLL)
30	FILI	I	Inputs to filter for master PLL.
31	PCO	O	Outputs of charge pump for master PLL.
32	V_{DD}	-	Power supply for digital.(+ 5V)
33	AV_{SS1}	-	Power supply for analog.(0V)
34	CLTV	I	VCO control voltage input for master PLL.
35	AV_{DD1}	-	Power supply for analog.(+ 5V)
36	RF	I	EFM signal input:
37	BIAS	I	Inputs constant current for asymmetry correction circuit.
38	ASYI	I	Inputs comparator voltage for asymmetry correction circuit.
39	ASYO	O	EFM fill swing output.("L" = V_{SS}, "H" = V_{DD})
40	ASYE	I	"L" : OFF of asymmetry correction. "H" : ON of asymmetry correction.
41	WDCK	O	Not used
42	LRCK	O	D/A interface for 48-bit slot. LR clock (f = FS)
43	LRCKI	I	Inputs LR clock to DAC.(48-bit slot)
44	PCMD	O	D/A interface. Serial data(2'SCOMP,MBS first)
45	PCMDI	I	Inputs audio data to DAC.(48-bit slot)
46	BCK	O	D/A interface. Bit clock.
47	BCKI	I	Inputs bit clock to DAC.(48-bit slot)
48	GTOP	O	Not used
49	XUGF	O	Not used
50	XPCK	O	Not used
51	GFS	O	Not used
52	RFCK	O	Not used
53	V_{SS}	-	GND.
54	C2PO	O	Not used
55	XROF	O	Not used
56	MNT3	O	Not used
57	MNT1	O	Not used
58	MNT0	O	Not used
59	FSTT	O	Not used
60	C4M	O	Not used
61	DOUT	O	Not used
62	EMPH	O	Stays "H" for playback disc provided with emphasis or "L" for that without emphasis.
63	EMPHI	I	De-emphasis ON/OFF of DAC. "H" at ON, "L" at OFF.
64	WFCK	O	Not used
65	ZEROL	O	Outputs detection for non-sound data. "H" at detection for non-sound data (L-ch)
66	ZEROR	O	Outputs detection for non-sound data. "H" at detection for non-sound data (R-ch)
67	DTS1	I	Normal used state: "L".
68	V_{DD}	-	Power supply for DAC.
69	LPWM	O	Outputs PWM for L-ch. (Positive Phase)
70	NLPWM	O	Outputs PWM for L-ch. (Negative Phase)
71	AV_{DD2}	-	Power supply for L-ch PWM driver.
72	AV_{DD3}	-	Power supply for X'tal.
73	XTAI	I	Inputs X'tal oscillation circuit (33.8688MHz).
74	XTAO	I	Outputs X'tal oscillation circuit (33.8688MHz).
75	AV_{SS3}	-	GND.
76	AV_{SS2}	-	GND.
77	NRPWM	O	Outputs PWM for R-ch. (Negative Phase)
78	RPWM	O	Outputs PWM for R-ch. (Positive Phase)
79	DTS2	I	Normal used state: "L".
80	DTS3	I	Normal used state: "L".

IC BLOCK DIAGRAM & DESCRIPTION

IC104 CXD2518Q (DIGITAL SIGNAL PROCESSOR)



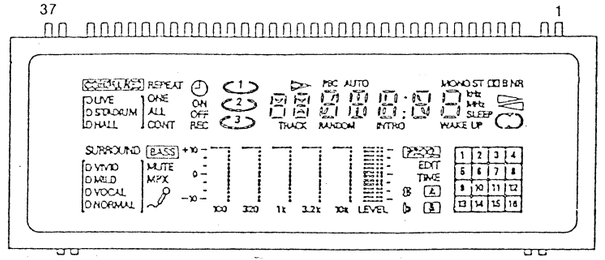
IC BLOCK DIAGRAM & DESCRIPTION

IC430 M38184M8-173FP (MICROPROCESSOR)

No.	PIN NAME	I/O	DESCRIPTION	POWER (OFF)
1	CD-SW1	I	CD OPEN SWITCH, CLOSE SWITCH	
2	CD-SW0	I	CD LIMIT SWITCH, FOK	
3	IR	I	REMOTE CONTROL	
4	SCLK	O	SIREAL CLOCK	L
5	SOUT	O	SIREAL DATA	L
6	TUN-SIN	I	TUNER IC245, DO	
7	REEL	I	TAPE DECK REEL PULSE	
8	CD-SCLK	O	CD IC104 CLK / SQCK	L
9	CD-SOUT	O	CD IC104 DATA	L
10	CD-SIN	I	CD IC104 SQSO	
11	PLY-PL	O	TAPE DECK PLAY PLUNGER (L = OFF, H = ON)	L
12	FR-PL	O	TAPE DECK FF/REW PLUNGER (L = OFF, H = ON)	L
13	SEL-DISP		SELECTION DISPLAY (L = SQUARE, H = PEAK HOLD)	
14	SEL-DEMO		SELECTION DEMO (L = RESET DEMO START, H = NO START)	
15	SEL-MUTE		SELECTION MUTE (L = OFF, H = ON)	
16	SEL-SUR2		SELECTION SURROUND (L = OFF/ON, H = OFF~HALL)	
17	SEL-SUR1		SELECTION SURROUND (L = OFF, H = ON)	
18	SEL-DUB		SELECTION DUBBING (L = NORMAL, H = HIGH)	
19	SEL-FUNC2		SELECTION FUNCTION	
20	SEL-FUNC1		SELECTION FUNCTION (L = VIDEO, H = PHONO, L = VD-PH, H = NO)	
21	SEL-CLOCK		SELECTION CLOCK (L = 12H, H = 24H)	
22	SEL-BASS		SELECTION BASS (L = OFF~3, H = OFF/ON)	
23	SEL-VFAD		SELECTION VOCAL FADER (L = OFF, H = ON)	
24	NC			L
25	CD-XLAT	O	CD DSP LATCH	L
26	NC			L
27	NC			L
28	T-MOTOR	O	CD TRAY OPEN/CLOSE MOTOR (L = CLOSE, M = STOP, H = OPEN)	M
29				L
30	CD-SENS	I	CD SENS	
31	CD-XRES		CD POWER CONTROL SIGNAL (H = POWER OFF, M = DSP RESET, L = POWER ON)	L
32	CD-SCOR	I	CD SCOR INDICATE	
33	CD-HIEQ	O	CD HIGH SPEED EQUALIZER (L = HIGH, H = NORMAL)	L
34	V-CHK		VOLTAGE CHECK, FAILURE	
35	RESET		SYSTEM RESET	
36	XCIN		SUB CLOCK, X'tal	
37	XCOUT		SUB CLOCK, X'tal	
38	XIN		MAIN CLOCK, CERAMIC	
39	XOUT		MAIN CLOCK, CERAMIC	
40	VSS		GROUND	
41	NC			L
42	NC			L
43	LED-DATA	O	LED IC431 DATA	L
44	LED-CLK	O	LED IC431 CLOCK	L
45	NC			L
46	NC			L
47	NC			L
48	MAIN MUTE	O	ANALOG AUDIO MUTE (L = OFF, H = ON)	L

No.	PIN NAME	I/O	DESCRIPTION	POWER (OFF)
49	VDCHK	I	VDD CHECK	
50	VDGND	O	VDD CHECK CURCUIT	H
51	MIC-IN	I	MIC (L = MIC OFF, H = MIC ON)	
52	TUN-CE	O	TUNER IC245 CE	L
53	DECK-CE	O	DECK IC311 CE	L
54	AMP-CE	O	NOT USED	L
55	VOL-CE	O	IC453 LATCH	L
56	P-CON		POWER CONTROL (L = OFF, H = ON)	L
57	G10	O	FL DIGIT 10	
58	G9	O	FL DIGIT 9	
59	G8	O	FL DIGIT 8	
60	G7	O	FL DIGIT 7	
61	G6	O	FL DIGIT 6	
62	G5	O	FL DIGIT 5	
63	G4	O	FL DIGIT 4	
64	G3	O	FL DIGIT 3	
65	G2	O	FL DIGIT 2	
66	G1	O	FL DIGIT 1	
67	S1	O	FL SEGMENT 1	
68	S13	O	FL SEGMENT 13	
69	S2	O	FL SEGMENT 2	
70	S14	O	FL SEGMENT 14	
71	S3	O	FL SEGMENT 3	
72	S15	O	FL SEGMENT 15	
73	S4	O	FL SEGMENT 4	
74	S16	O	FL SEGMENT 16	
75	S5	O	FL SEGMENT 5	
76	S17	O	FL SEGMENT 17	
77	S12	O	FL SEGMENT 12	
78	S11	O	FL SEGMENT 11	
79	S10	O	FL SEGMENT 10	
80	S9	O	FL SEGMENT 9	
81	S8	O	FL SEGMENT 8	
82	S19	O	FL SEGMENT 19	
83	S7	O	FL SEGMENT 7	
84	S18	O	FL SEGMENT 18	
85	S6	O	FL SEGMENT 6	
86	PLAY-SW	I	TAPE DECK PLAY SWITCH	
87	FR-SW	I	TAPE DECK FF / REW SWITCH	
88	PACK-SW	I	TAPE DECK PACK SWITCH	
89	VEE		-30V, FL POWER, VEE	
90	CRO2-SW	I	TAPE SELECT SWITCH, CRO2	
91	VCC		VCC	
92	G-FWD-SW	I	TAPE DECK, FORWARD, UN-RECORDING SWITCH	
93	AVSS		A/D GROUND	
94	VREF		A/D REFERENCE VOLTAGE, VREF	
95	G-REV-SW	I	TAPE DECK, REVERSE, UN-RECORDING SWITCH	
96	LEVEL	I	LEVEL	
97	KEY2	I	KEY INPUT	
98	KEY1	I	KEY INPUT	
99	KEY0	I	KEY INPUT	
100	NC			L

LCD DESCRIPTION



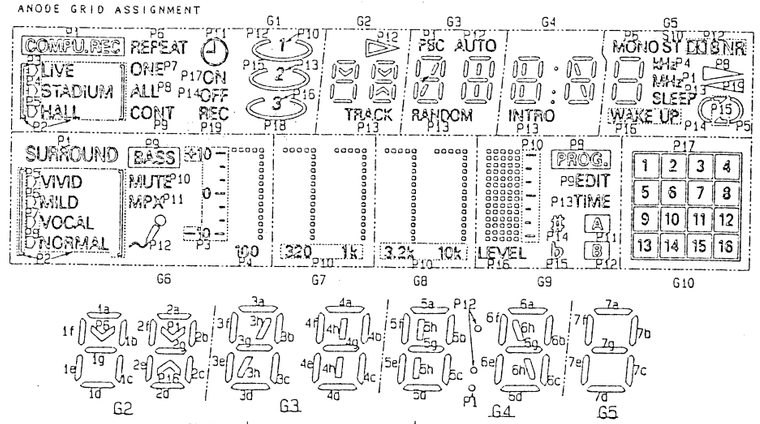
PIN ASSIGMENT

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Assignment	F	F	NP	S6	S18	S7	S19	S8	S9	S10	S11	S12	S17	S5	S16	S4	S15	S3

Pin No.	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
Assignment	S14	S2	S13	S1	NL	NL	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	NP	F	F

F: Filament, NP : No Pin, NL : No Lead
S1~S19 : Anode, G1~G10 : Grid

ANODE GRID ASSIGNMENT



ANODE GRID ASSIGNMENT

	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10
S1	COMPU REC		PSC	.	MHz	SURRAUND	P1	P1	P1	1
S2	P2	1d	3d	5d	7d	P2	P2	P2	P2	2
S3	D (LIVE)	1e	3e	5e	7e	P3	P3	P3	P3	3
S4	D (STAD)	2c	4c	6c	kHz	100	P4	P4	P4	4
S5	D (HALL)	2g	4g	6g	☽	D (VIVID)	P5	P5	P5	5
S6	REPEAT		3h	5h	MONO	D (WILD)	P6	P6	P6	6
S7	ONE	1f	3f	5f	7f	D (VOCAL)	P7	P7	P7	7
S8	ALL	2b	4b	6b		D (NORMAL)			PROG.	8
S9	CONT	1b	3b	5b	7b	BASS			EDIT	9
S10	1	2a	4a	6a	ST	MUTE	320	1k 3.2k	10k P10	10
S11	⏲	1a	3a	5a	7a	MXP			A	11
S12	↻ 1		AUTO	:	88 8 NR				B	12
S13	2	TRACK	RANDOM	INTRO	SLEEP	P13	P13	P13	TIME	13
S14	OFF	2d	4d	6d	☾	P14	P14	P14		14
S15	↻ 2	2e	4e	6e		P15	P15	P15		15
S16	3		4h	6h	WAKE UP	P16	P16	P16	LEVEL	16
S17	ON	1c	3c	5c	7c	P17	P17	P17		P17
S18	↻ 3	1g	3g	5g	7g	P18	P18	P18		
S19	REC	2f	4f	6f		P19	P19	P19		

G1-P2 (LIVE STADIUM HALL)
G6-P2 (VIVID WILD VOCAL NORMAL)
G6-P3 (REPEAT ONE ALL CONT)
G9-P10
G10-P17

IC & TRANSISTOR VOLTAGES

• CD SECTION

IC101 CXA1782BQ

(V)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
PLAY	2.6	2.5	2.5	2.5	2.5	2.7	2.5	2.9	2.5	2.5	0.8	2.5	2.5	2.5	2.5
STOP	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.9	2.5	2.5	0.8	2.5	2.5	2.5	2.5
Pin No.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
PLAY	2.5	1.2	5.0	5.0	5.0	4.9	4.8	0	5.0	5.0	0.6	0.7	1.5	2.4	2.5
STOP	2.5	1.2	5.0	5.0	5.0	4.9	4.8	0	5.0	0	2.2	4.3	3.1	1.2	2.5
Pin No.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
PLAY	3.5	2.5	3.8	0.2	2.5	2.5	2.4	2.3	2.5	2.2	0	2.5	2.5	2.5	2.5
STOP	1.0	3.5	0.8	0	2.2	2.2	2.5	2.5	2.1	3.4	0	2.5	2.5	2.5	2.5
Pin No.	46	47	48												
PLAY	2.5	2.5	2.5												
STOP	2.5	2.5	2.5												

IC102 BA6398FP

(V)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
PLAY	4.2	4.2	2.5	2.5	8.2	5.0	4.8	0	2.5	2.4	4.6	4.1	0	2.4	2.5
STOP	4.2	0	2.5	2.5	9.3	5.0	4.8	0	2.5	2.5	4.6	4.6	0	9.0	2.5
Pin No.	16	17	18	19	20	21	22	23	24	25	26	27	28		
PLAY	2.5	4.2	4.4	2.5	2.5	9.2	9.2	2.5	2.5	2.5	4.2	4.2	0		
STOP	2.5	4.6	4.6	2.5	2.5	9.2	9.2	2.5	2.5	0	4.6	4.6	0		

IC104 CXD2518

(V)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
PLAY	0	0	5.0	0	4.7	0	5.0	4.8	4.7	4.8	4.8	0	5.0	0	3.3
STOP	0	3.4	5.0	0	4.9	0	0	4.8	4.8	4.8	4.8	0	5.0	0	5.0
Pin No.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
PLAY	5.0	5.0	5.0	5.0	0	0	0.5	5.0	5.0	2.6	0	5.0	0	2.5	2.5
STOP	5.0	5.0	5.0	0	0	0	5.0	0	0	2.5	0	0	0	2.5	2.5
Pin No.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
PLAY	2.5	5.0	0	2.5	5.0	2.7	0.8	2.5	2.5	5.0	2.5	2.5	2.5	2.5	2.5
STOP	2.5	5.0	0	2.5	5.0	2.7	0.8	2.5	2.5	5.0	2.5	2.5	2.5	2.7	2.7
Pin No.	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
PLAY	2.0	2.4	0	5.0	1.7	5.0	2.5	1.7	0	5.0	4.5	0	0	2.6	1.7
STOP	2.0	2.4	5.0	5.0	1.7	0	2.5	0	5.0	0	4.3	3.6	0	2.6	2.1
Pin No.	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
PLAY	1.7	0	0	2.5	0	0	0	0	2.5	2.5	5.0	2.5	2.5	2.5	0
STOP	2.1	2.1	2.1	2.5	4.8	4.8	0	5.0	2.5	2.5	5.0	5.0	2.5	2.5	0
Pin No.	76	77	78	79	80										
PLAY	0	2.5	2.5	0	0										
STOP	0	2.5	2.5	0	0										

IC106 NJM4558D

(V)

Pin No.	1	2	3	4	5	6	7	8
PLAY	Fluc	Fluc	Fluc	0	Fluc	Fluc	Fluc	11.5
STOP	Fluc	Fluc	Fluc	0	Fluc	Fluc	Fluc	11.5

IC132 LB1641

(V)

Pin No.	1	2	3	4	5	6	7	8	9	10
STOP	0	0.5	0.8	0.8	5.0	1.8	11.7	11.7	0.7	0.5
OPEN	0	4.1	5.5	4.1	5.0	0	11.7	11.7	0.7	0
CLOSE	0	0	0.8	4.1	0	4.4	11.7	11.7	4.1	4.1

Fluc : Fluctuation

PIN	Q1101			Q1102			Q1201			Q1202			Q1211		
	B	C	E	B	C	E	B	C	E	B	C	E	B	C	E
PLAY	4.5	1.8	3.7	5.0	5.0	4.2	9.7	5.0	9.1	5.0	1.2	4.7	0	0	4.6
STOP	1.4	1.3	0	5.0	1.3	5.0	9.1	5.0	7.8	5.0	4.9	0.7	0	4.4	0

PIN	Q1321			Q1371		
	B	C	E	B	C	E
PLAY	0	0	0.6	5.0	4.9	1.8
STOP	0	0	0.6	5.0	4.9	1.8

• FRONT SECTION

IC430 M38184

(V)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CD : PLAY	0	3.8	5.2	0	0	4.9	0	5.2	0	0	0	0	5.4	5.4	0
CD : STOP	0	3.9	5.3	0	5.3	5.0	0	0	0	0	0	0	5.4	5.4	0
Pin No.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
PLAY	0	0	5.4	0	0	5.4	5.4	0	2.7	4.9	0	5.3	1.8	2.7	0
STOP	0	0	5.4	0	0	5.4	5.4	0	2.7	0	0	5.3	1.8	2.7	0.9
Pin No.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
PLAY	0	0	4.8	5.0	4.9	1.6	2.5	2.3	2.4	0	0	0	0	0	1.6
STOP	4.8	0.9	4.8	5.0	4.9	1.5	2.4	2.2	2.4	0	0	0	0	0	0
Pin No.	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
PLAY	1.5	1.3	0	4.9	4.9	0	0	0	0	0	2.1	Fluc	Fluc	Fluc	Fluc
STOP	0	0	1.5	4.9	4.9	0	0	0	0	0	1.9	Fluc	Fluc	Fluc	Fluc
Pin No.	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
PLAY	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc
STOP	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc
Pin No.	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PLAY	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	5.3	5.3	5.3	-27	5.3
STOP	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	5.3	5.3	5.3	-33	5.3
Pin No.	91	92	93	94	95	96	97	98	99	100					
PLAY	4.9	5.4	0	5.4	5.3	0	5.3	5.3	5.3	2.7					
STOP	4.9	5.4	0	5.4	5.3	0	5.3	5.3	5.3	2.7					

Fluc : Fluctuation

PIN	Q4230			Q4231			Q4232			Q4233		
	B	C	E	B	C	E	B	C	E	B	C	E
TAPE : PLAY	11.5	0	11.6	11.5	0	11.6	0	11.5	0	0	11.5	0
TAPE : STOP	11.5	0	11.6	11.5	0	11.6	0	11.5	0	0	11.5	0

PIN	Q4250			Q4260		
	B	C	E	B	C	E
POWER : OFF	0	4.8	0	5.0	4.9	5.0
POWER : ON	0	4.8	0	4.8	4.7	4.8

(V)

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